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Service Manual

ORDER NO.
RRV2897

DIGITAL WIRELESS SPEAKER SYSTEM

XW-HTD630A

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
XW-HTD630A	KUCXJ	AC120V	

● This service manual should be used together with the following manual(s):

Model	Order No.	Remarks
XW-HTD630/KUCXJ	RRV2809	

- **Ask user to bring the TX and RX pair set (Transmitter and Wireless Speaker) together when servicing.**

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *Reference Nos. indicate the pages and Nos. in the service manual for the base model.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56×10^1 → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47×10^3 → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562×10^1 → 5621 ..... RN1/4PC 5 6 2 1 F

■ CONTRAST TABLE

XW-HTD630A/KUCXJ and XW-HTD630/KUCXJ are constructed the same except for the following:

Ref. No.	Mark	Symbol and Description	Part No.		Remarks
			XW-HTD630/KUCXJ	XW-HTD630A/KUCXJ	
		PACKING			
P7 - 5		Operating Instructions (English/French)	ARC7475	ARE7344	
P7 -12		Packing Case	AHD8215	AHD8280	
		TRANSMITTER SECTION			
P9 - 9	NSP	Name Label T	AAL7330	AAL7348	
		WIRELESS SPEAKER SECTION			
P11-26		Primary Barrier	AEC7476	AEC7490	
P11-52	NSP	Name Label	AAL7322	AAL7347	
P11-56		65 Label	ARW7050	Not used	

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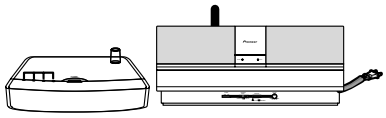
Service Manual



XW-HTD630

ORDER NO.
RRV2809

Digital Wireless Rear Speaker System

XW-HTD630

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
XW-HTD630	KUCXJ	AC120V	

- **Ask user to bring the TX and RX pair set (Transmitter and Wireless Speaker) together when servicing.**

For details, refer to "Important symbols for good services".

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ⓒ**PIONEER CORPORATION 2003**

T-ZZV JUNE 2002 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

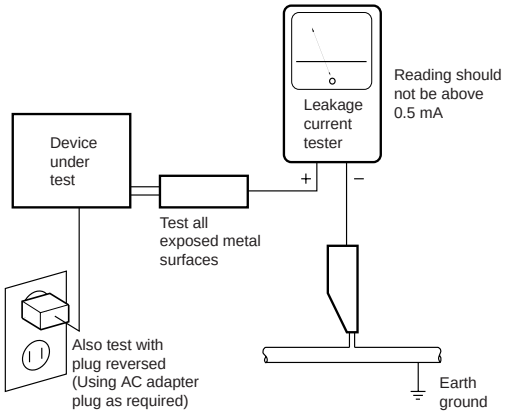
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Reading should not be above 0.5 mA
Leakage current tester
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

General

Digital Wireless Rear Speaker System
(Transmitter/Wireless speaker)

Transmitter

AC adapter
- Power requirements AC120V, 60Hz
- Power consumption 8W
- Rated output 12V/300mA

Power consumption (without AC adapter) 2W
Input . . . . . .RCA jack
Weight. 0.3kg
Dimensions. . . . . .166(W)x56(H)x112(D)mm

Wireless Speaker

Power requirements AC120V, 60Hz
Power consumption 57W
Amplifier characteristics
- Maximum power output . . . . . 25W/ch RMS(1kHz,THD10%, 4Ω)

Speaker unit . . . . . .7cm cone type x2
Weight. 4.2kg
Dimensions. . . . . .420(W)x178(H)x138(D)mm

Accessories

AC adapter 1
RCA stereo cord. 1

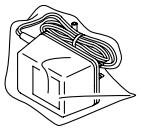
Note

- The specifications and design of this product are subject to change without notice, due to improvement.

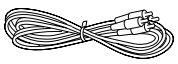
This product is intended for household purposes. Any failure due to use for other than household purposes (such as long-term use for business purposes in a restaurant or use in a car or ship) and which requires repair will be charged for even in the warranty period.

● Accessories

- AC Adapter (AWR7006)



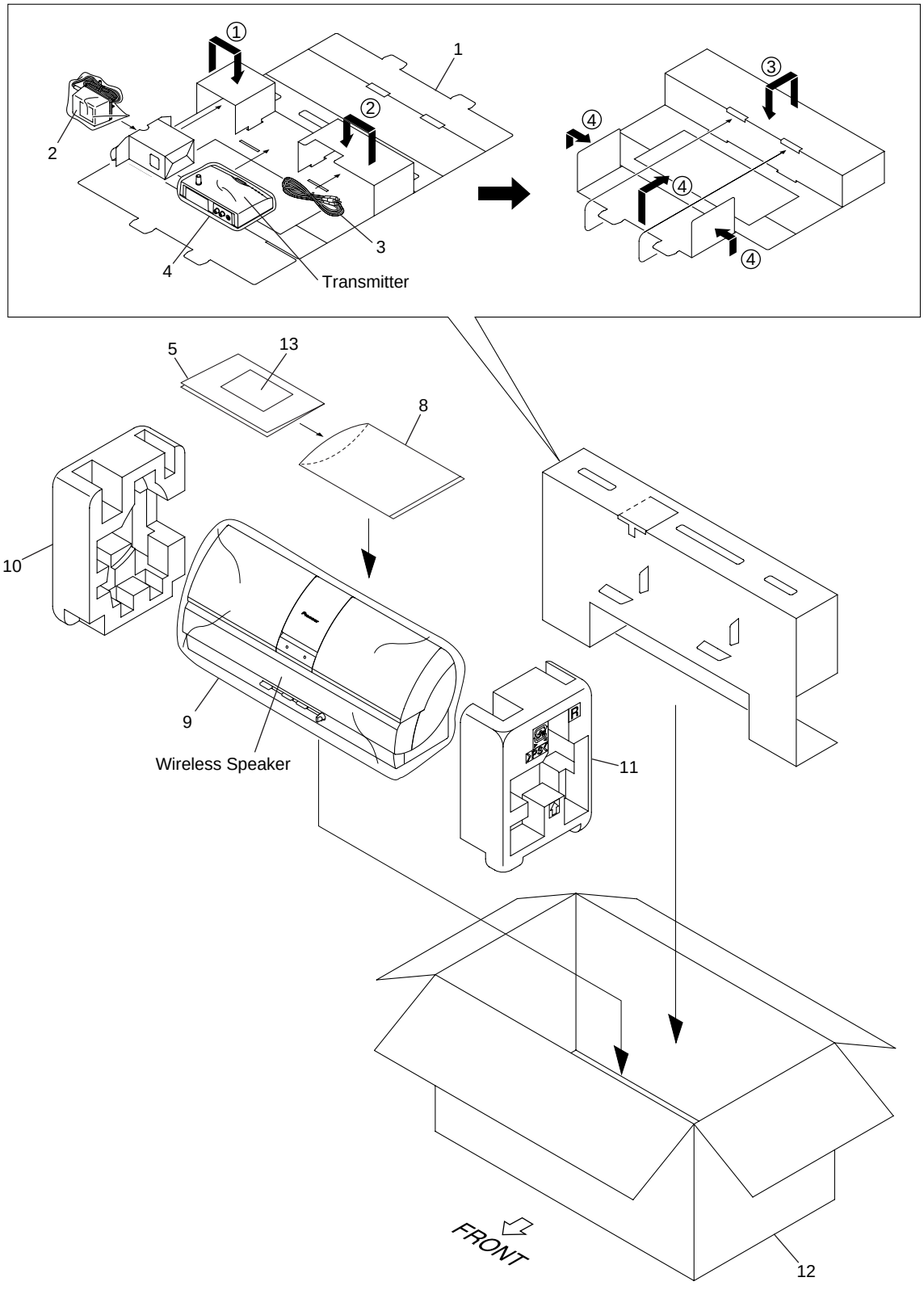
- RCA stereo cord(L=1.5m) (VDE1064)



2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

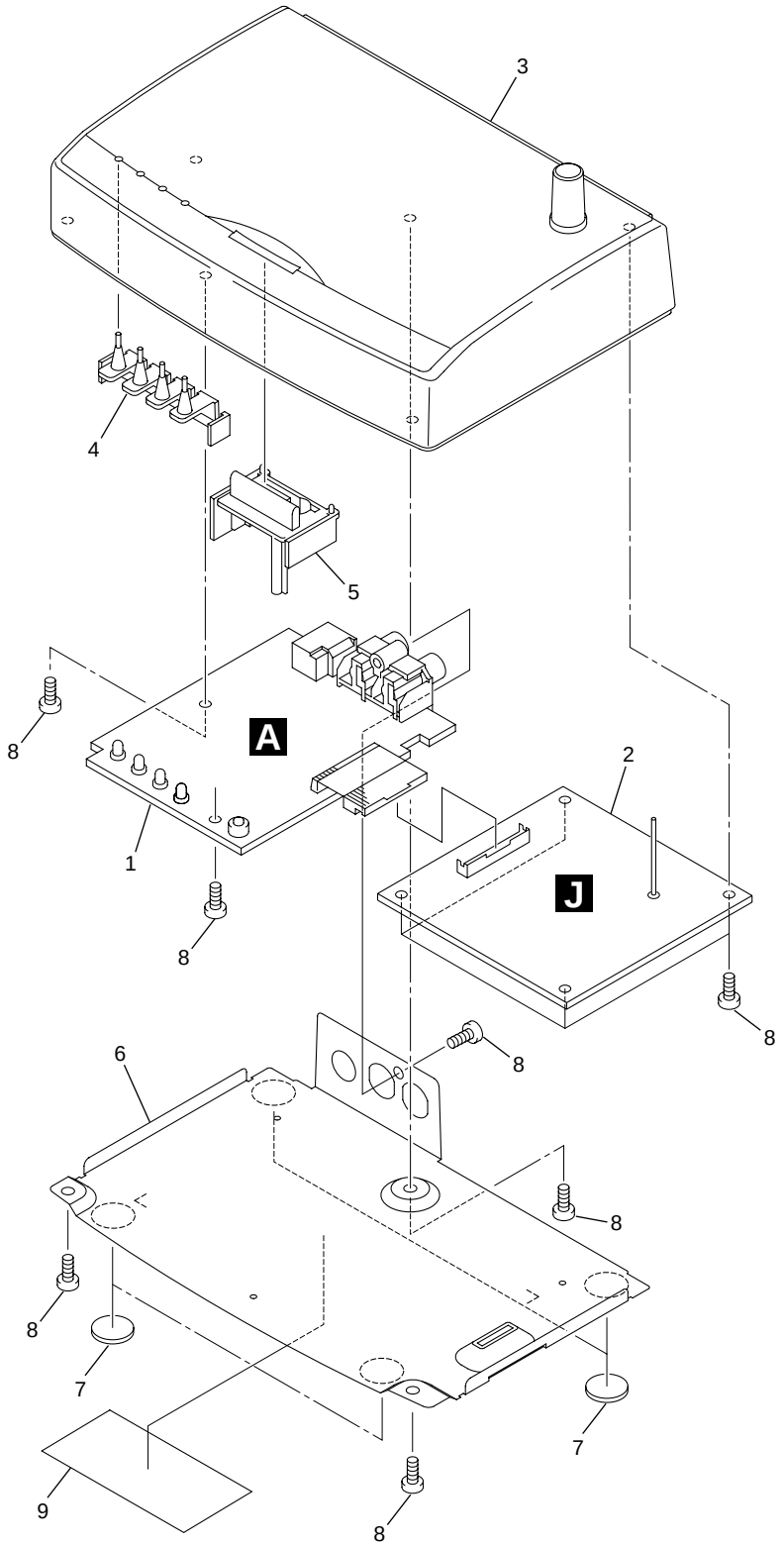
2.1 PACKING



PACKING parts List

Mark	No.	Description	Part No.
	1	Accessory Box	AHB7083
	2	AC Adapter	AWR7006
	3	RCA Stereo Cord	VDE1064
NSP	4	Literature Bag	AHG1180
	5	Operating Instructions (English, French)	ARC7475
	6	• • • • • • • •	
	7	• • • • • • • •	
NSP	8	Polyethylene Bag	Z21-038
	9	Packing Sheet (large)	AHG7010
	10	Pad L	AHA7414
	11	Pad R	AHA7415
	12	Packing Case	AHD8215
NSP	13	Warranty Card	ARY7045

2.2 TRANSMITTER SECTION

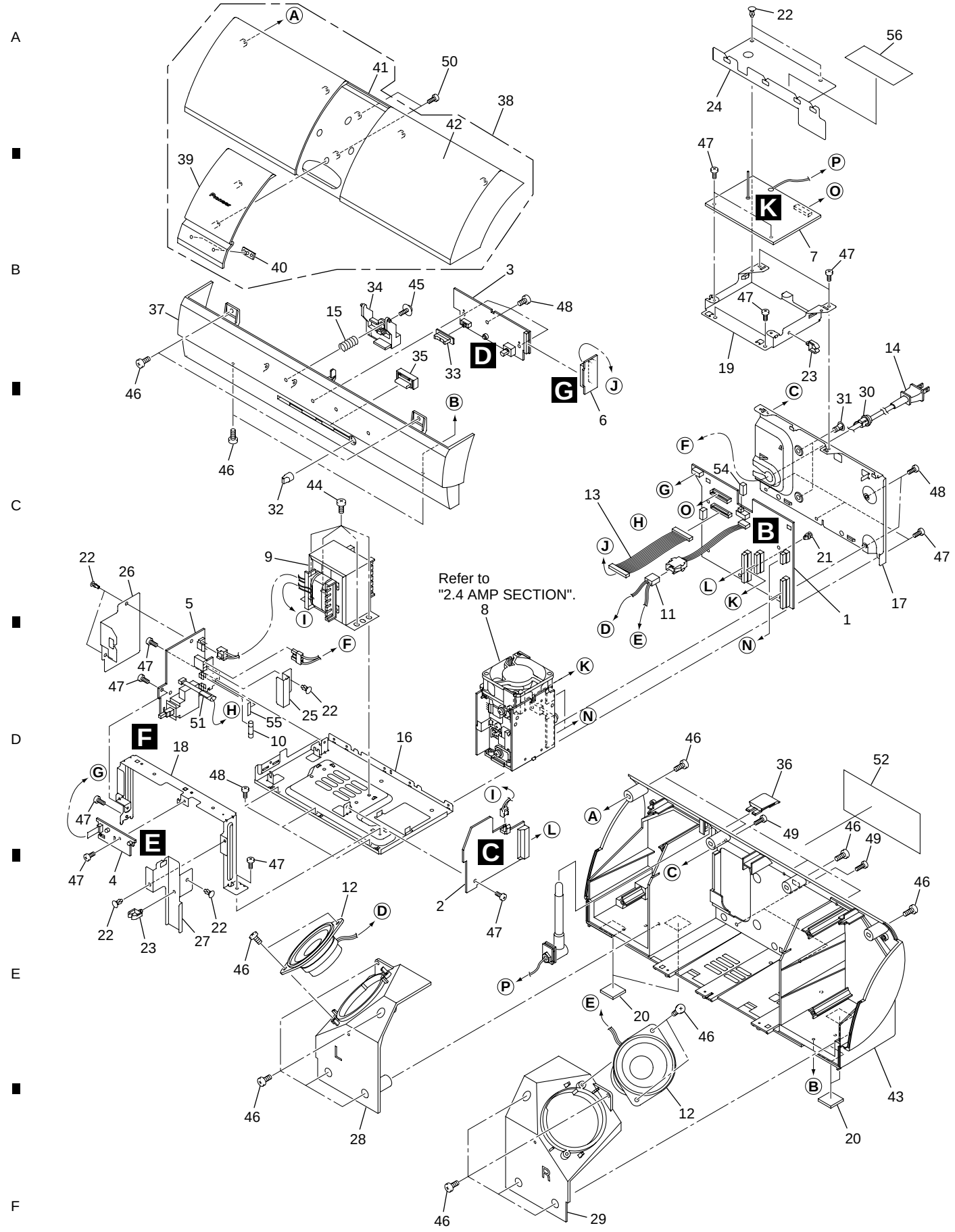


TRANSMITTER SECTION parts List

Mark	No.	Description	Part No.
	1	TX Assy	AWU8120
	2	TX Module	AXF7006
	3	Top Panel	AAK8172
	4	CS Lens	AAK8133
	5	CS Button T	AAD7712
	6	Chassis T	ANA7157
	7	Leg	AEB7090
	8	Screw *	ABA7097
NSP	9	Name Label T	AAL7330

* Use TORX driver GGK1028.

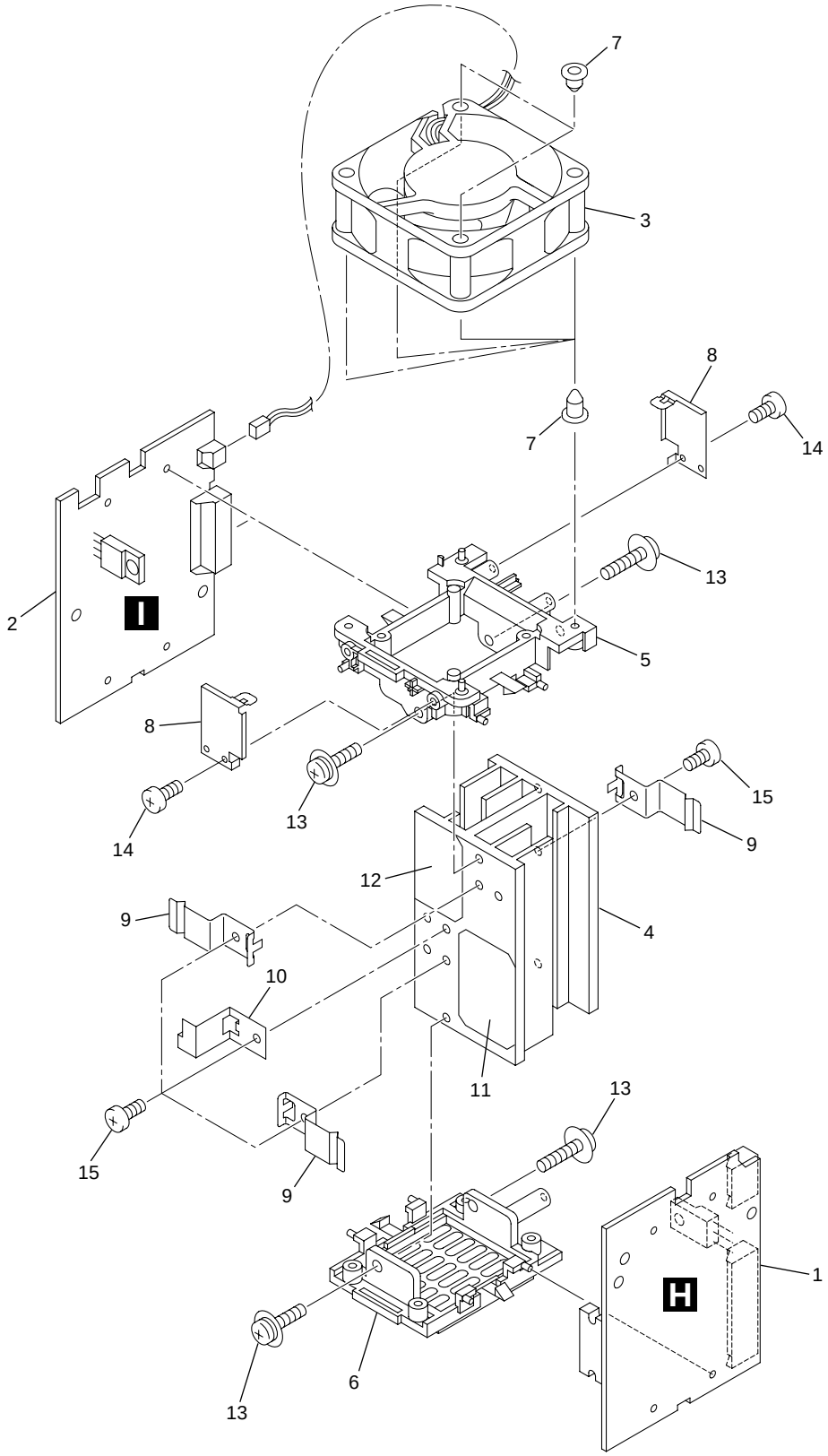
2.3 WIRELESS SPEAKER SECTION



WIRELESS SPEAKER SECTION parts List

Mark	No.	Description	Part No.
	1	MAIN Assy	AWU8121
	2	POWER Assy	AWU8122
	3	FRONT Assy	AWU8123
	4	LED Assy	AWU8124
	5	PRI Assy	AWU8125
	6	RELAY Assy	AWU8126
	7	RX Module	AXF7008
NSP	8	AMP Module L-2CH	AXQ7249
⚠	9	Power Transformer (T1)	ATS7366
⚠	10	Fuse (FU1 : 1.6A)	REK1110
	11	4P Cable Assy	ADX7431
	12	Speaker	B70AC50-51C
	13	13P Connector Assy	PG13KK-G22
⚠	14	Power Cord	VDG1075
	15	Spring P	ABH7231
	16	Chassis	ANA7156
	17	Rear Panel	ANC8184
	18	PCB Angle	ANG7464
	19	Shield Cover A	ANK7112
	20	Rubber Leg	AEB7318
NSP	21	PCB Spacer (3 x 6)	AEC7156
	22	Push Rivet	AEC7221
	23	Mini Clamp	AEC7373
	24	Top Barrier	AEC7474
	25	Fuse Barrier	AEC7475
	26	Primary Barrier	AEC7476
	27	Front Barrier	AEC7484
	28	Baffle L	AMD7009
	29	Baffle R	AMD7010
	30	Strain Relief	CM-22C
NSP	31	PC Support	VEC1749
	32	MIC Knob	AAB7262
	33	Slide Knob	AAC7052
	34	Power Button	AAD7710
	35	CS Button	AAD7711
	36	Antenna Cover	AAK8142
	37	Front Panel	AMB7855
	38	Grille Assy	AXG7209
	39	Center Panel	AAK8171
	40	Auto Lens	AAK8131
NSP	41	SP Grille	AAK8146
NSP	42	Jersey Net	AAR7010
	43	Rear Case Assy	AXG7210
	44	Screw	BBZ40P060FMC
	45	Screw	IPZ30P080FMC
	46	Screw	BPZ40P100FZK
	47	Screw	BBZ30P060FMC
	48	Screw	BPZ30P080FZK
	49	Screw	BBZ30P080FNI
	50	Screw	BPZ30P080FMC
	51	UL Tube	ADN7011
NSP	52	Name Label	AAL7322
	53	• • • • • • •	
	54	• • • • • • •	
NSP	55	Fuse Card	AAX7520
	56	65 Label	ARW7050

2.4 AMP SECTION



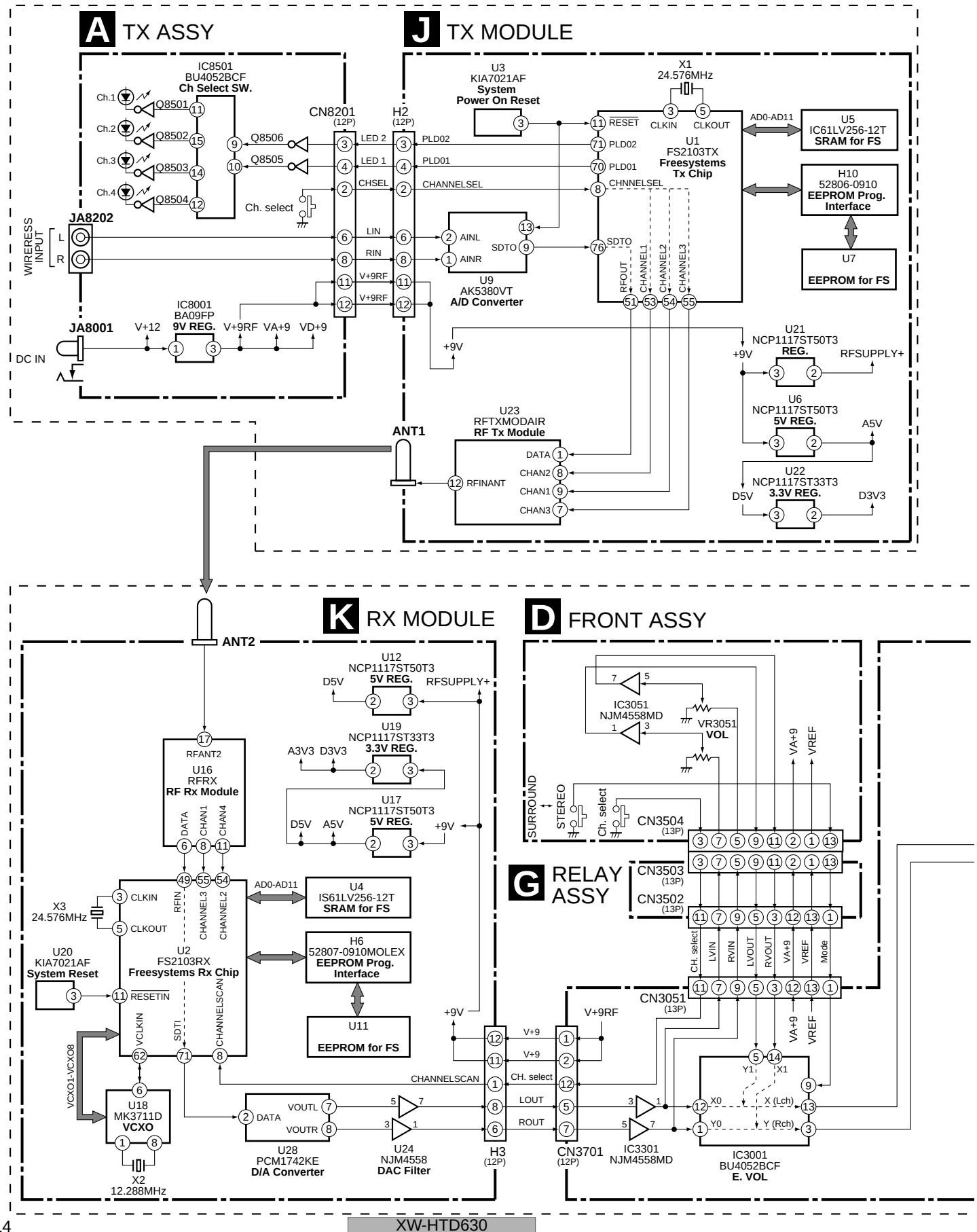
AMP SECTION parts List

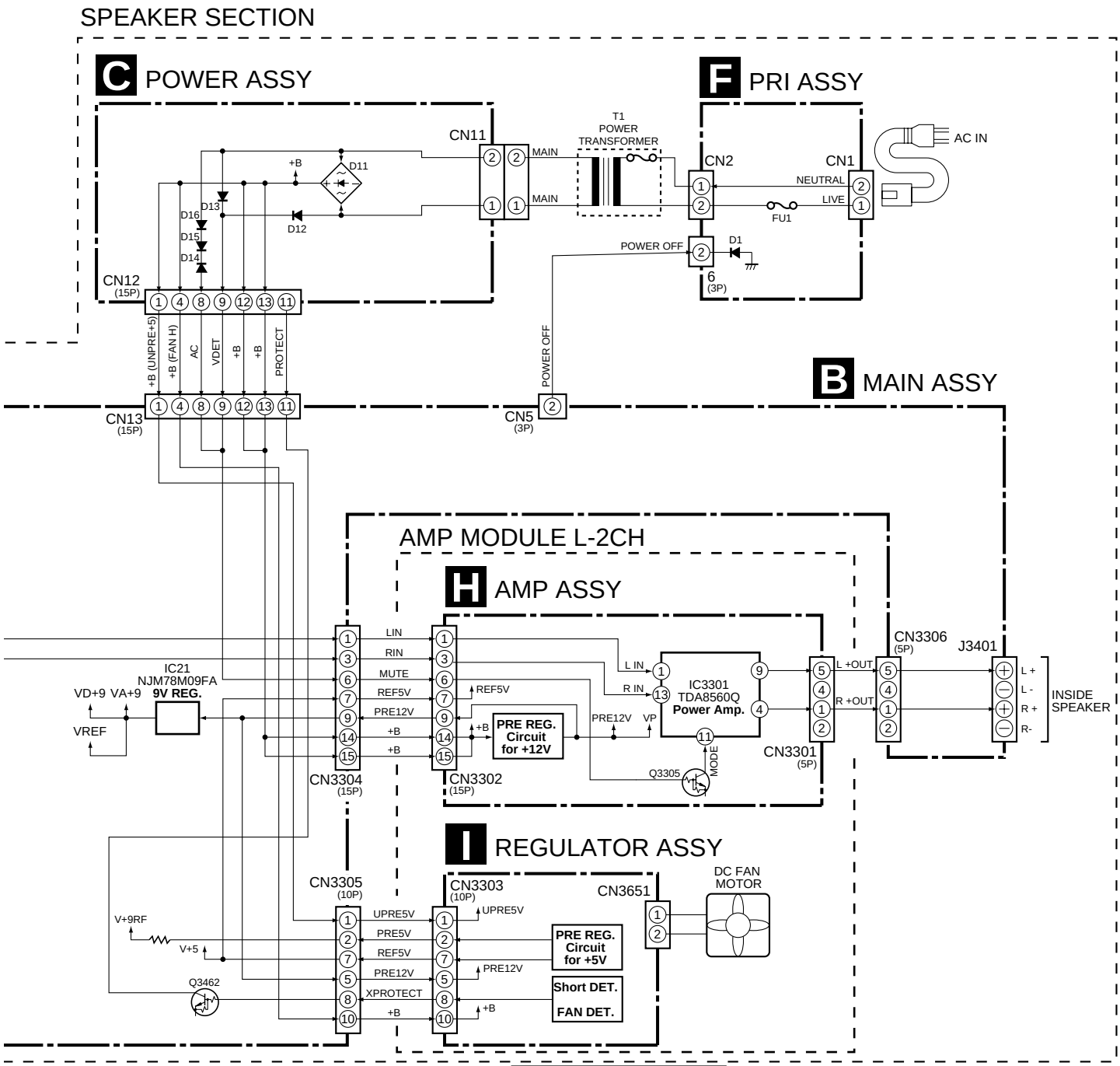
Mark	No.	Description	Part No.
	1	AMP Assy	AWU7968
	2	REGULATOR Assy	AWU7969
	3	DC Fan Motor	AXM7025
	4	Heat Sink	ANH7169
	5	Fan Mold	AMR7470
	6	Rear Mold	AMR7437
	7	Insulation Rubber	AEB7256
	8	Insulation Plate	AND7055
	9	FET Bracket A	ANG7432
	10	PCB Holder	ANG7472
	11	Mica Sheet A	AEE7049
	12	Mica Sheet B	AEE7050
	13	Screw	ABA1021
	14	Screw	BPZ30P080FZK
	15	Screw	BBZ30P060FMC

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

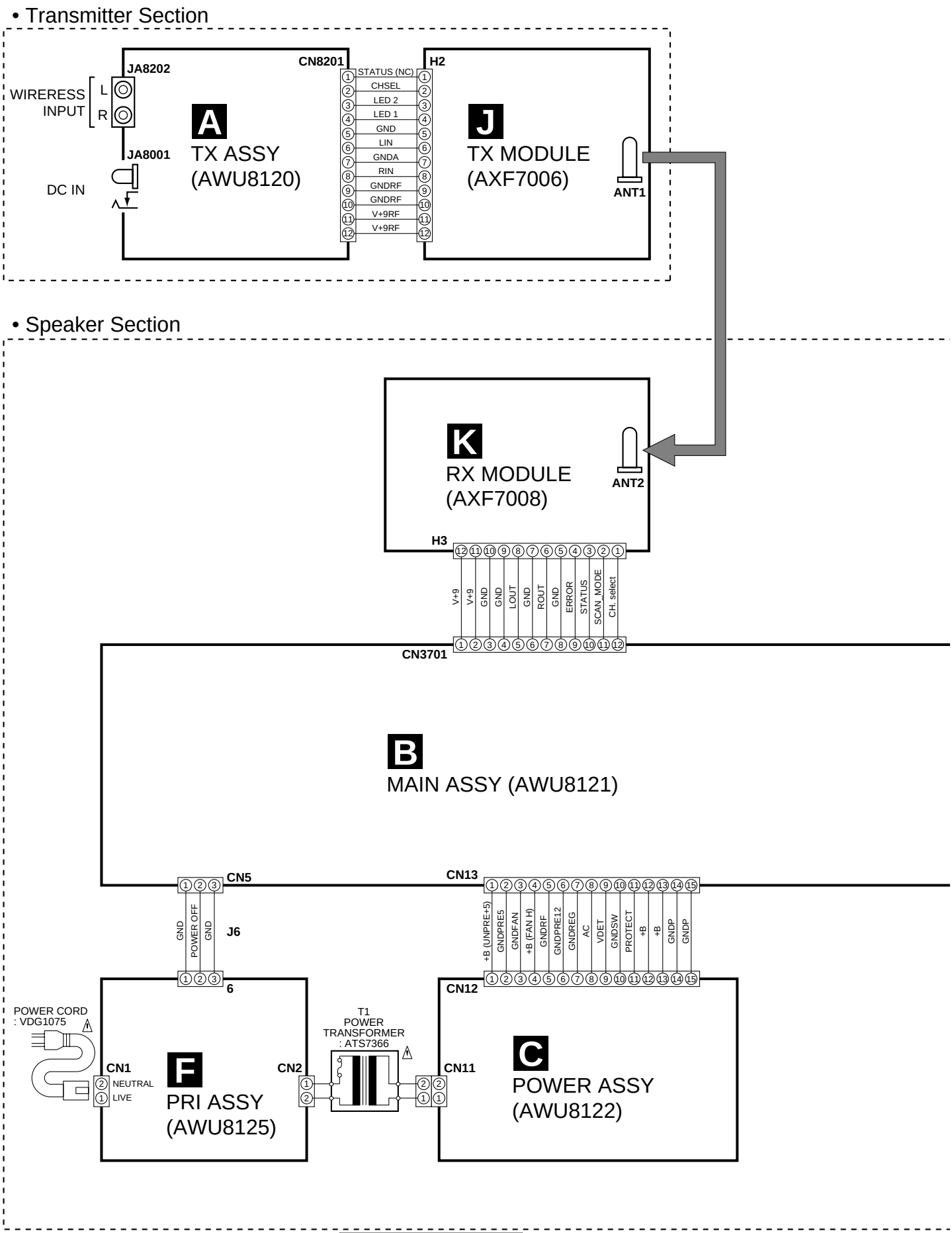
3.1 BLOCK DIAGRAM

TRANSMITTER SECTION

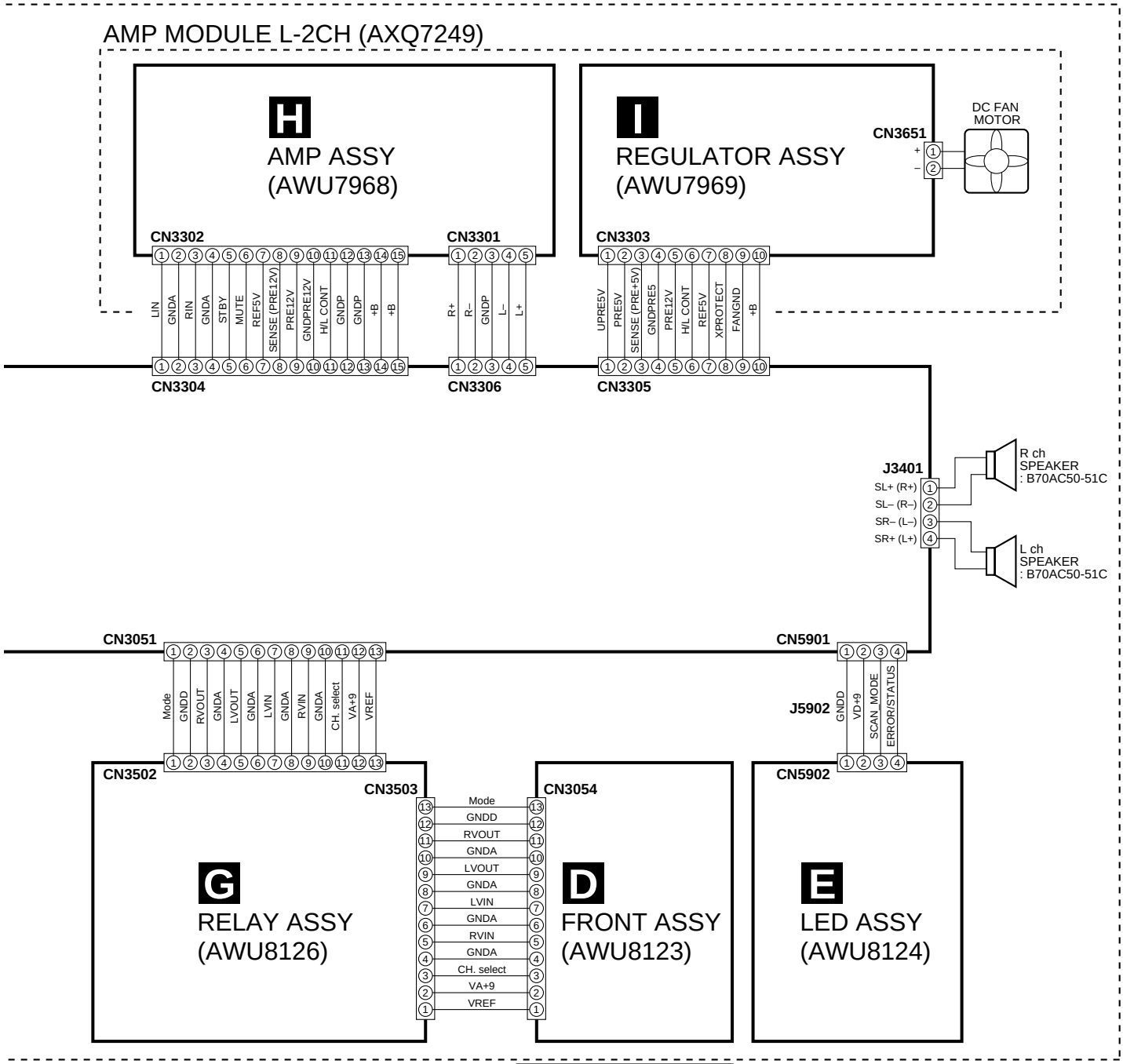



SPEAKER SECTION
C POWER ASSY
F PRI ASSY
B MAIN ASSY
AMP MODULE L-2CH
H AMP ASSY
I REGULATOR ASSY
CN11
MAIN
MAIN
T1
POWER
TRANSFORMER
CN2
CN1
AC IN
NEUTRAL
LIVE
FU1
POWER OFF
D1
6
(3P)
+B
D11
D12
D13
D16
D15
D14
CN12
(15P)
+B (UNPRE+5)
+B (FAN H)
AC
VDET
+B
+B
PROTECT
CN13
(15P)
POWER OFF
CN5
(3P)
IC21
NJM78M09FA
9V REG.
VD+9 VA+9
VREF
LIN
RIN
MUTE
REF5V
PRE12V
+B
+B
CN3304
(15P)
CN3302
(15P)
REF5V
+B
PRE REG.
Circuit
for +12V
L IN
R IN
IC3301
TDA8560Q
Power Amp.
PRE12V
VP
MODE
Q3305
CN3301
(5P)
L +OUT
R +OUT
CN3306
(5P)
J3401
L +
L -
R +
R-
INSIDE
SPEAKER
CN3305
(10P)
CN3303
(10P)
CN3651
DC FAN
MOTOR
V+9RF
V+5
Q3462
UPRE5V
PRE5V
REF5V
PRE12V
XPROTECT
+B
UPRE5V
PRE REG.
Circuit
for +5V
PRE12V
Short DET.
FAN DET.
+B

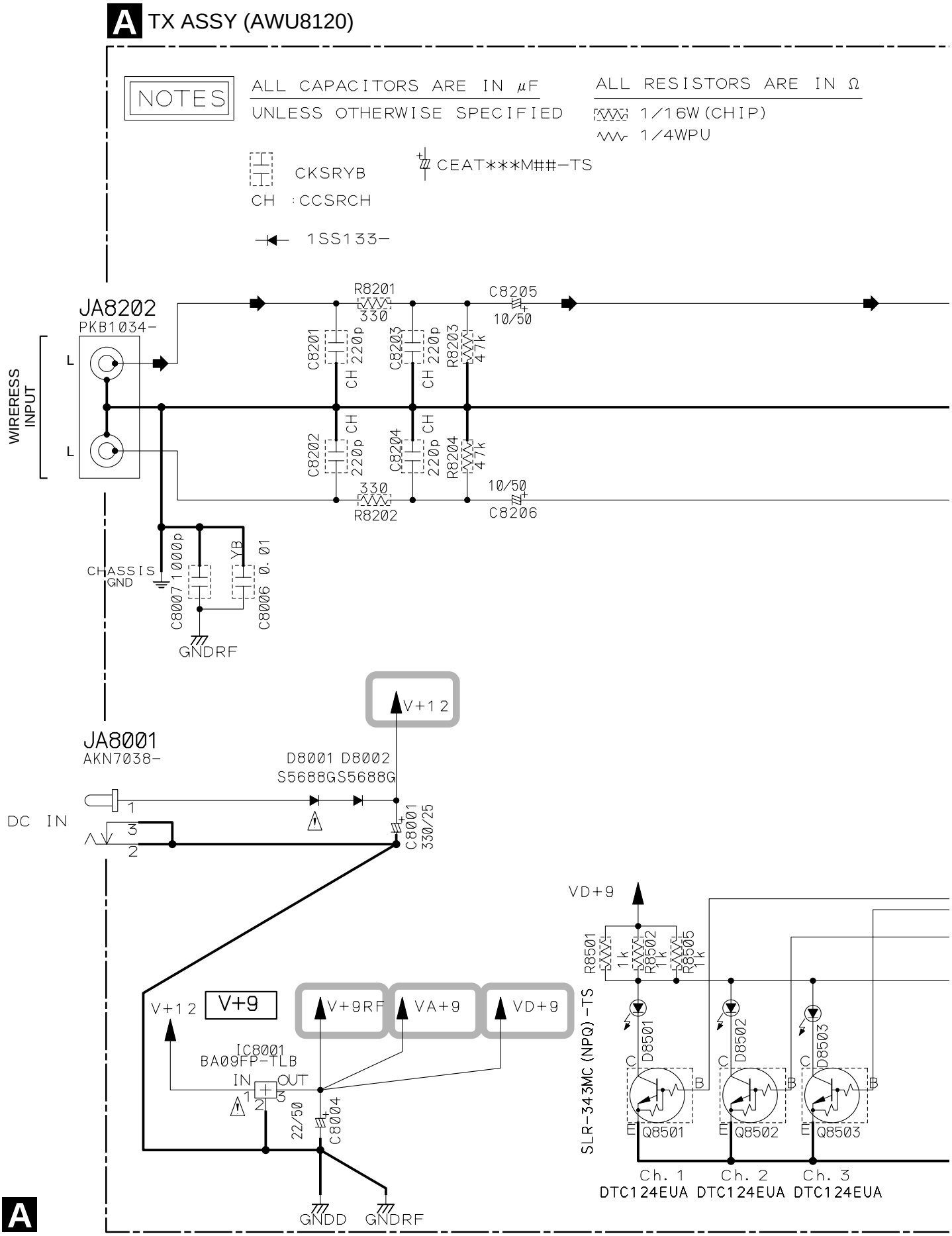
3.2 OVERALL WIRING DIAGRAM



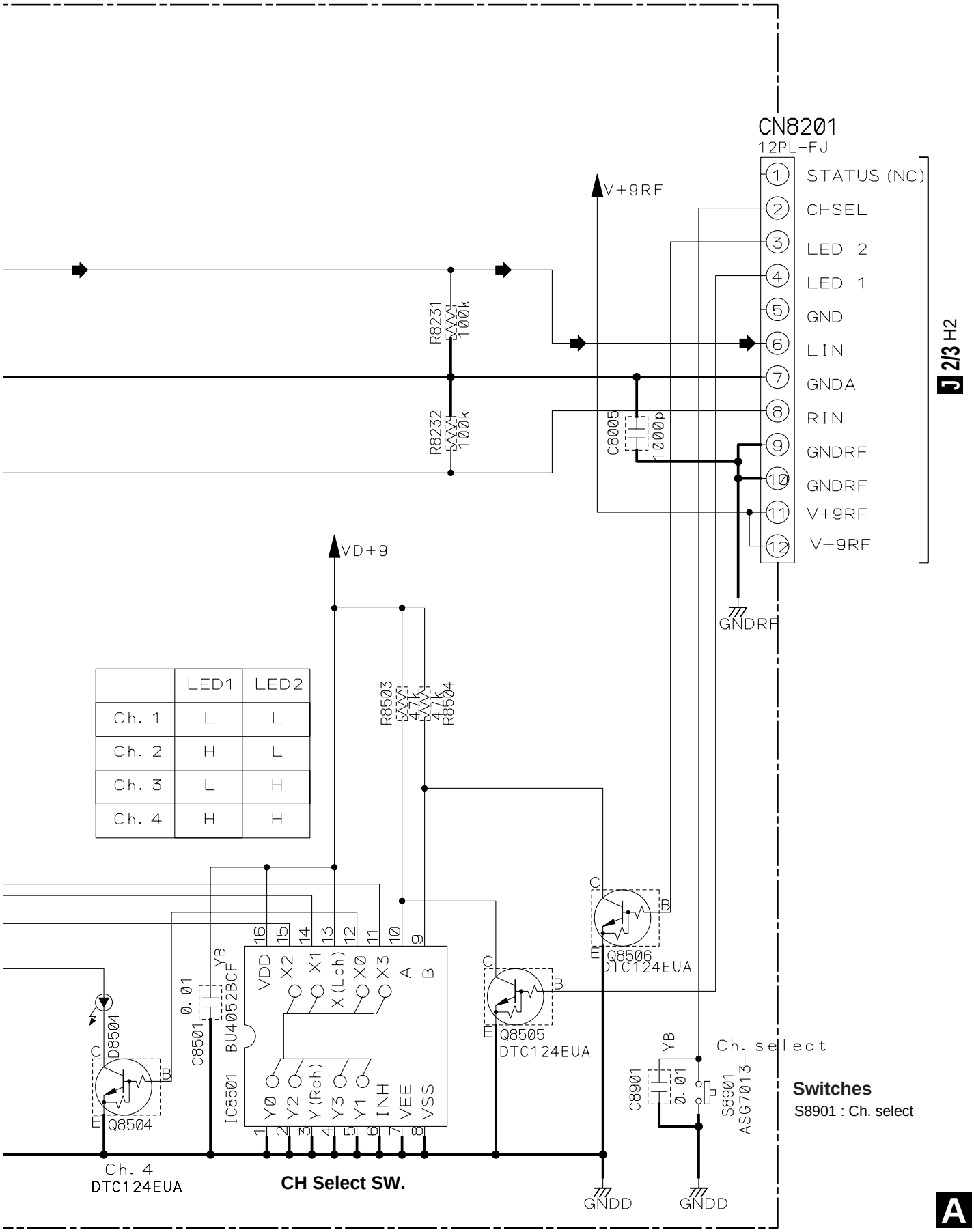
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



3.3 TX ASSY


A TX ASSY (AWU8120)
NOTES
ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS ARE IN Ω
1/16W(CHIP)
1/4WPU
CKSRYB
CH : CCSRCH
CEAT***M##-TS
1SS133-
JA8202
PKB1034-
WIRERESS INPUT
L
L
R8201 330
C8205 10/50
C8201 CH 220p
C8203 CH 220p
R8203 47k
C8202 CH 220p
C8204 CH 220p
R8204 47k
330 R8202
10/50 C8206
CHASSIS GND
C8007 1000p
YB
C8006 0.01
GNDRF
JA8001
AKN7038-
DC IN
D8001 D8002
S5688GS5688G
C8001 330/25
V+12
V+12
V+9
V+9RF
VA+9
VD+9
IC8001
BA09FP-TLB
IN
OUT
C8004 22/50
GNDD
GNDRF
VD+9
R8501 1k
R8502 1k
R8505 1k
D8501
D8502
D8503
Q8501
Q8502
Q8503
SLR-343MC (NPQ)-TS
Ch. 1 Ch. 2 Ch. 3
DTC124EUA DTC124EUA DTC124EUA

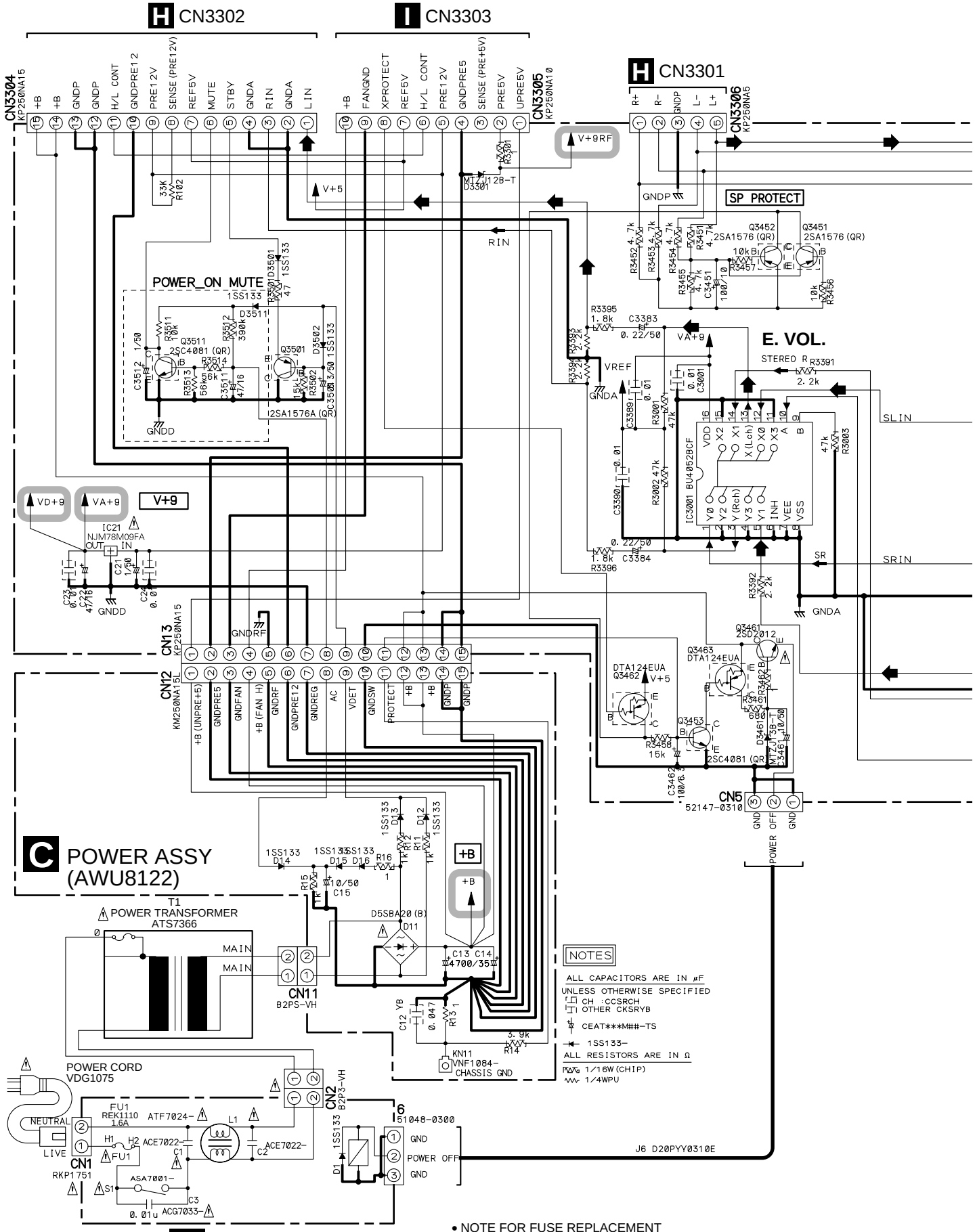
: AUDIO SIGNAL ROUTE (L ch) : The power supply is shown with the marked box.



Switches

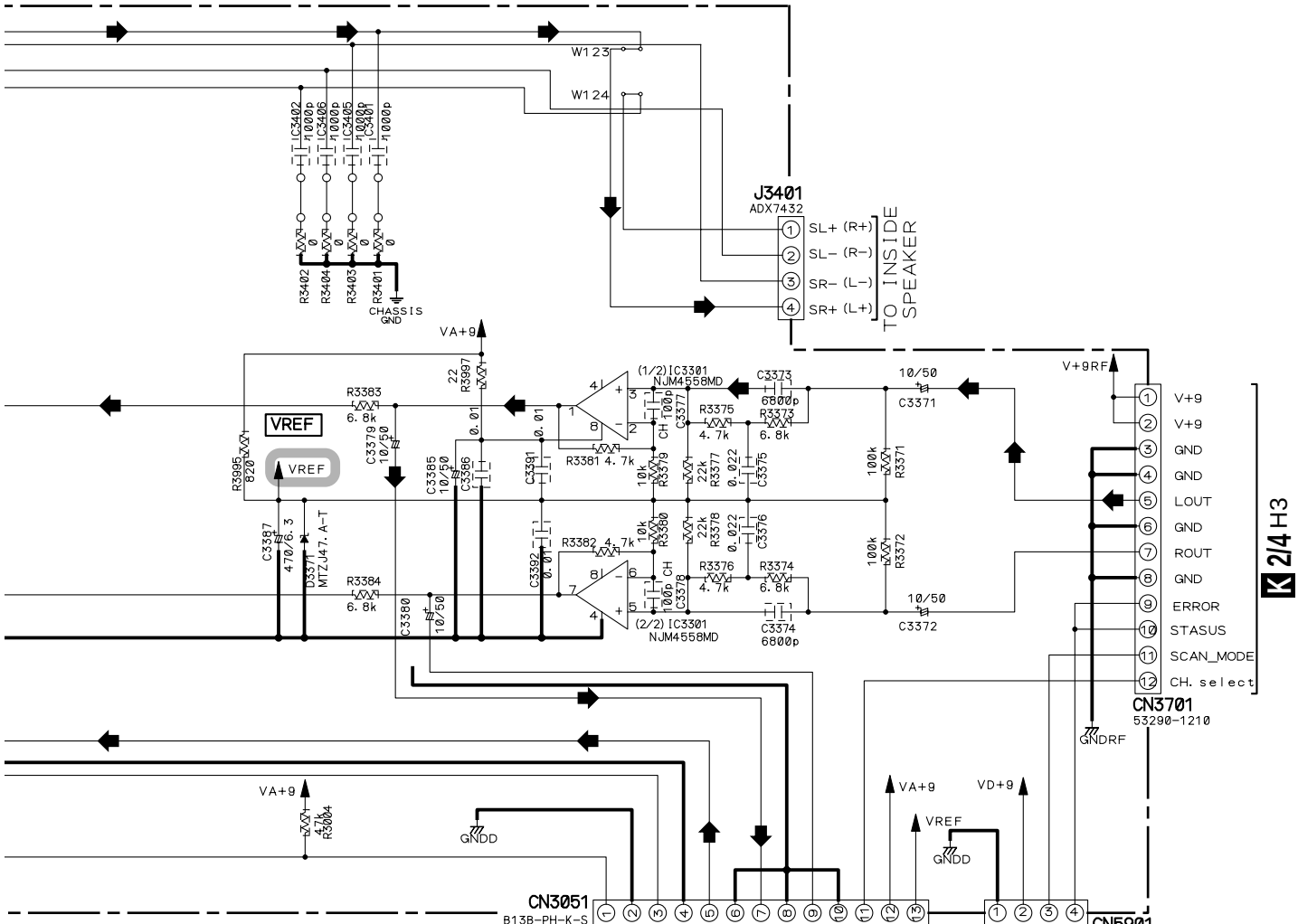
S8901 : Ch. select

3.4 MAIN, POWER, FRONT, LED, PRI and RELAY ASSYS

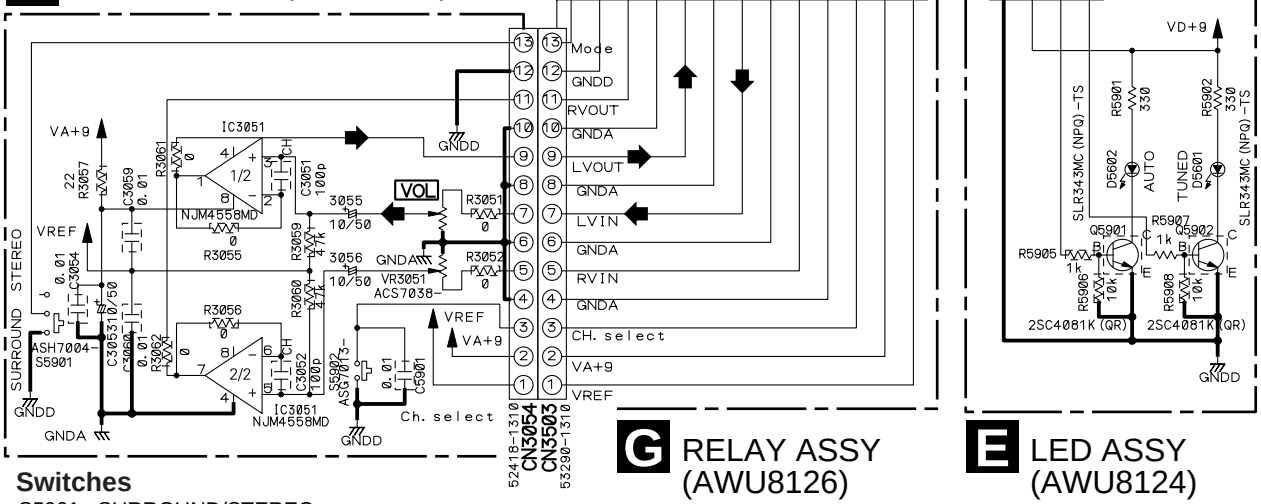


: AUDIO SIGNAL ROUTE (L ch)

B MAIN ASSY (AWU8121)



D FRONT ASSY (AWU8123)



G RELAY ASSY (AWU8126)

E LED ASSY (AWU8124)

Switches

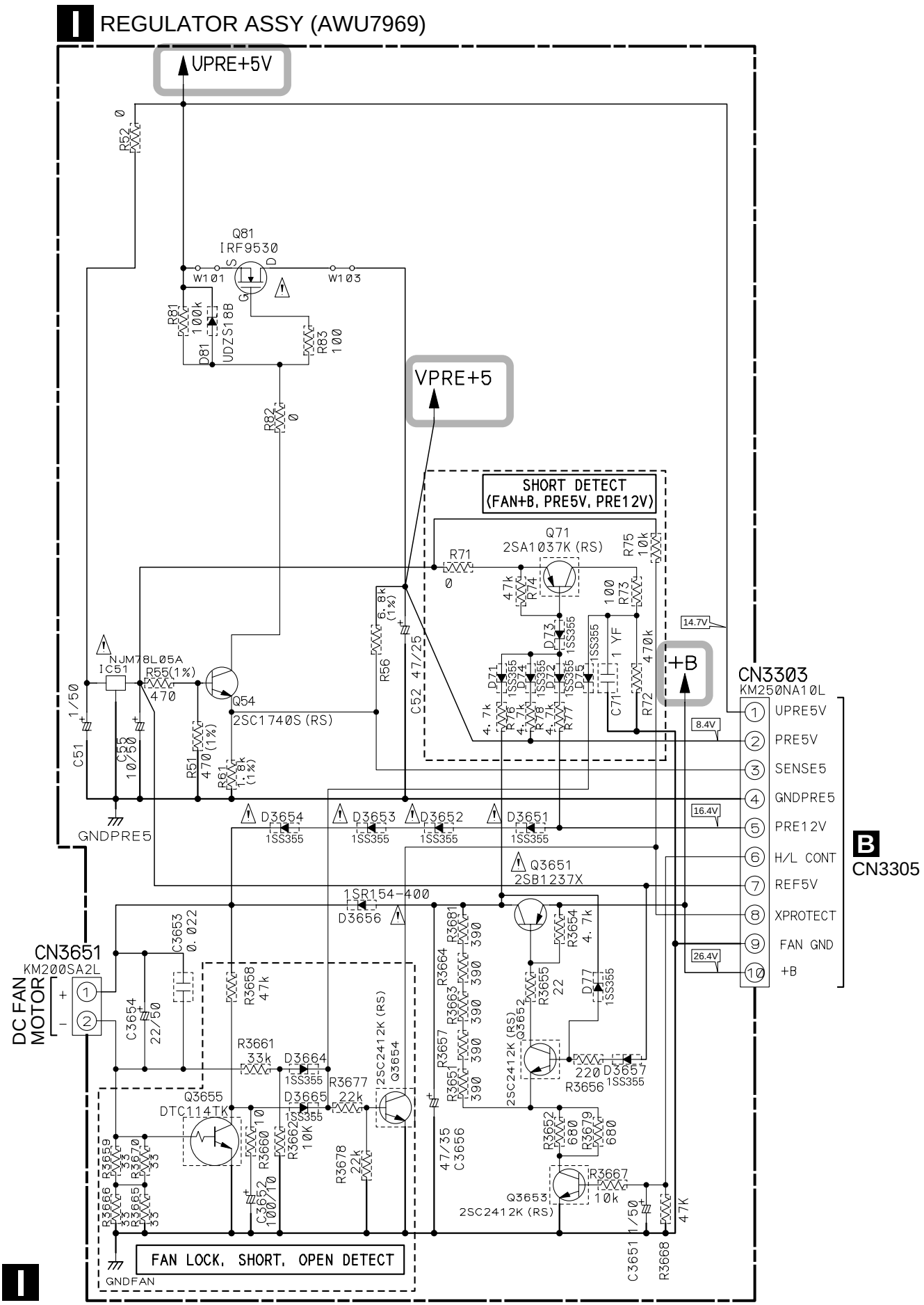
S5901 : SURROUND/STEREO

S5902 : Ch.select

: The power supply is shown with the marked box.

B D E G

3.5 AMP and REGULATOR ASSYS



: The power supply is shown with the marked box.

: AUDIO SIGNAL ROUTE (L ch)

NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED

CH : CCSRCH
YF : CKSRYF
(OTHER : CKSRYB)

CEAT***M##-TS

ALL RESISTORS ARE IN Ω

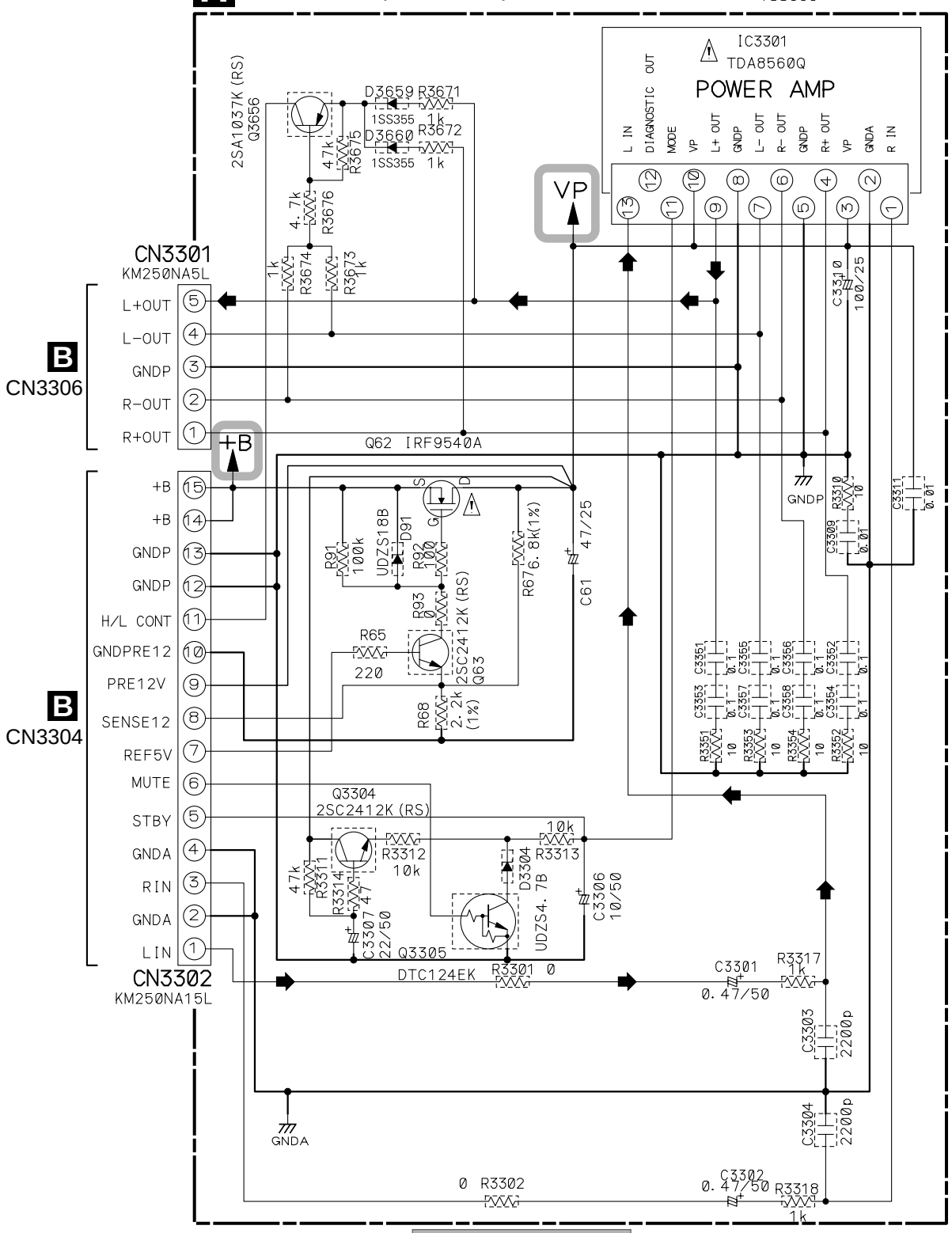
1/16W

NO MARK RESISTORS ARE 1/16W

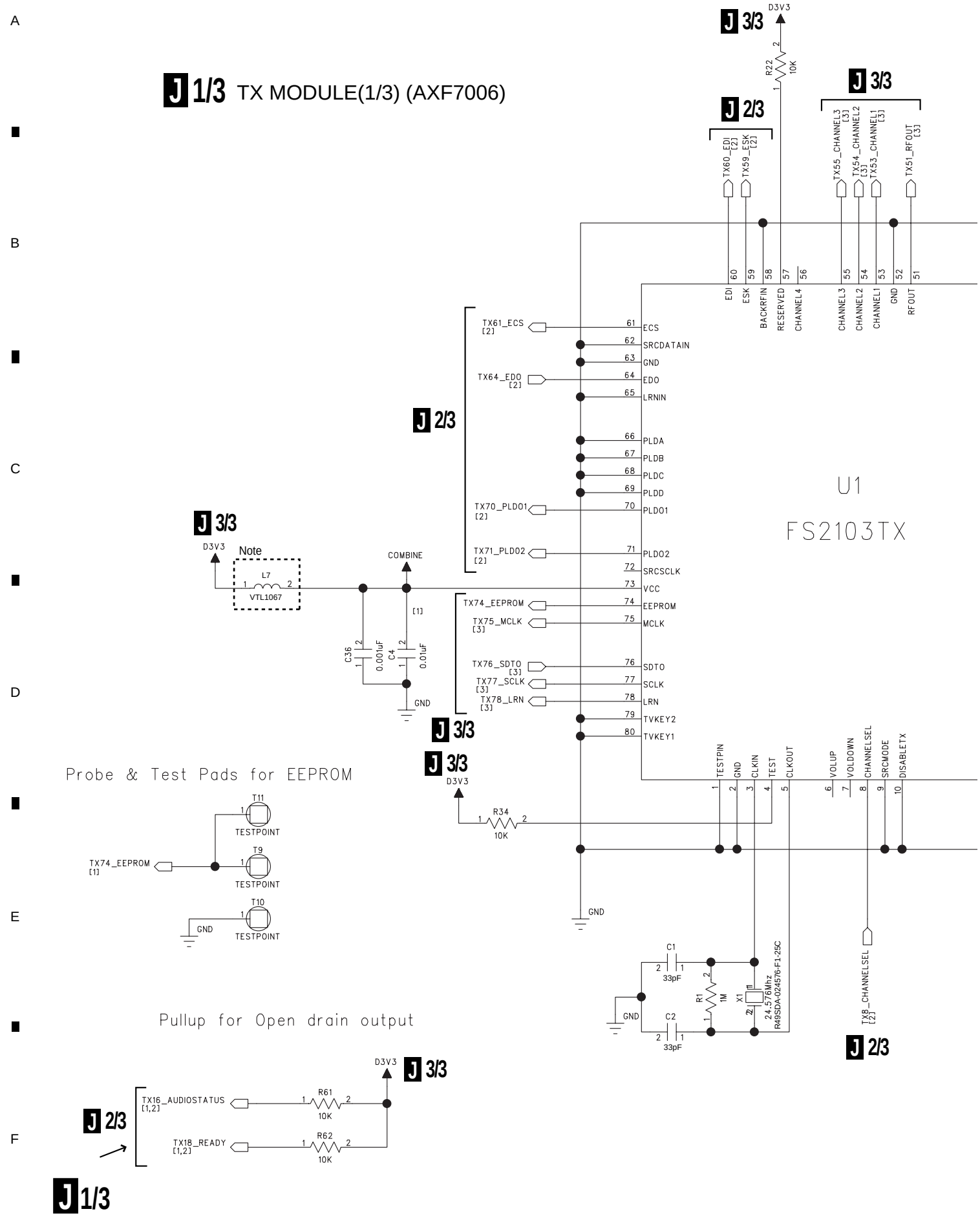
NO MARK DIODE

1SS355

H AMP ASSY (AWU7968)



3.6 TX MODULE(1/3)

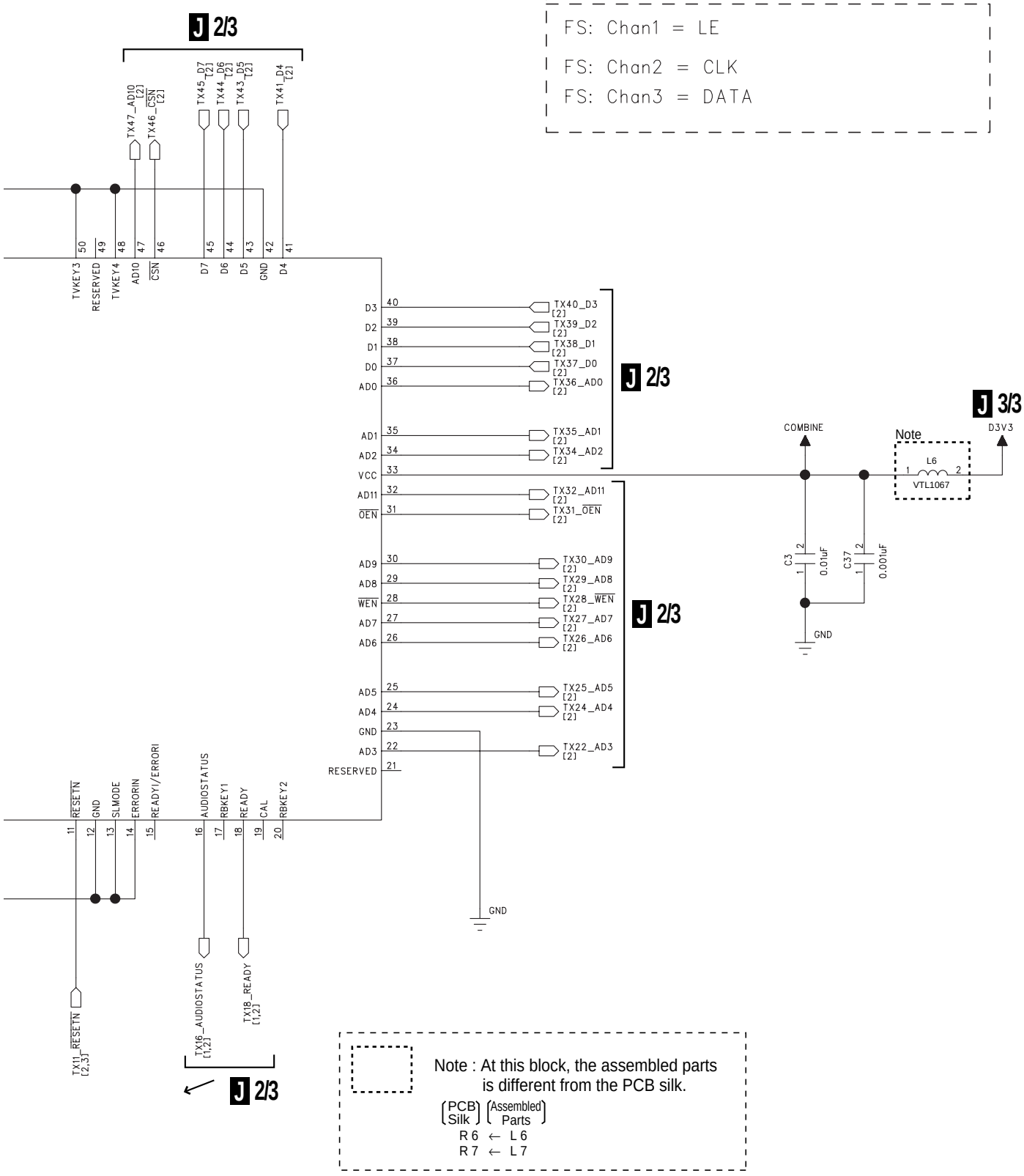


FS PIN Assignment for -MCU RF Module

FS: Chan1 = LE

FS: Chan2 = CLK

FS: Chan3 = DATA



Note : At this block, the assembled parts is different from the PCB silk.

PCB Silk	Assembled Parts
R6	← L6
R7	← L7

J 1/3

3.7 TX MODULE(2/3)

A

B

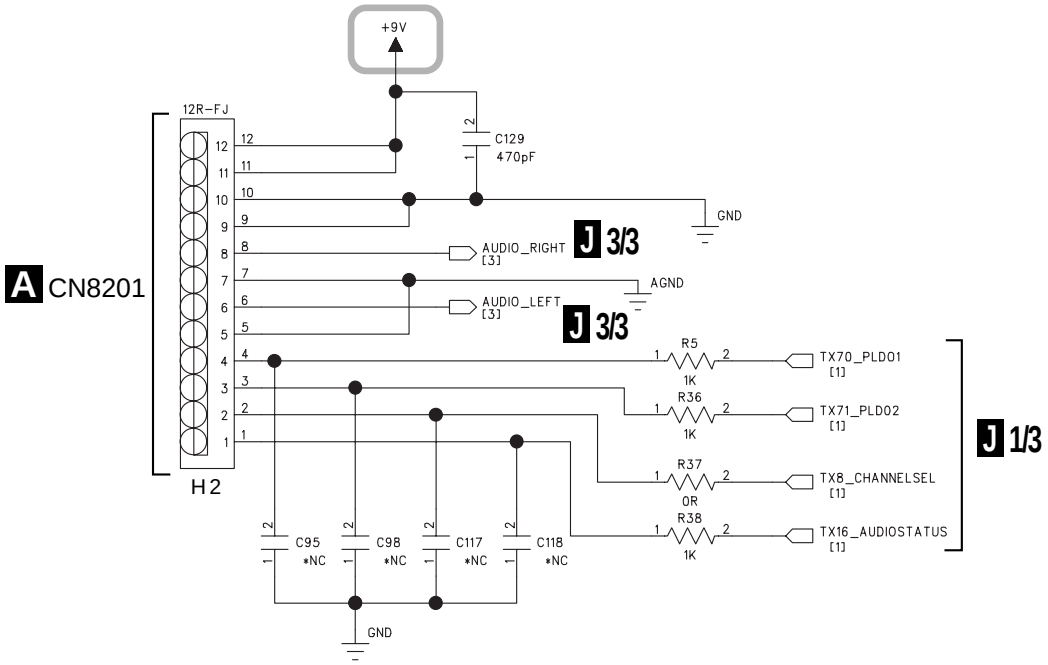
C

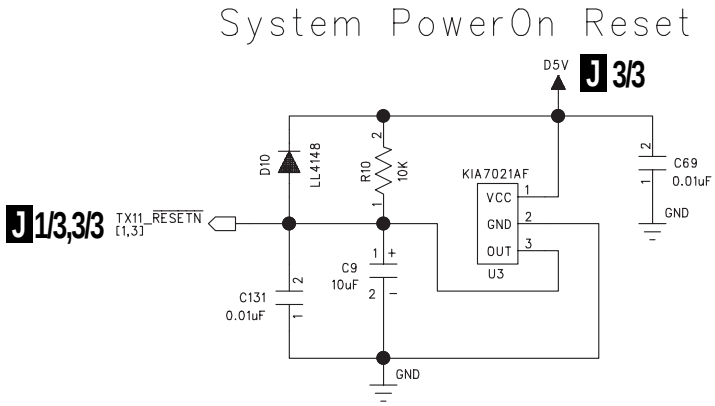
D

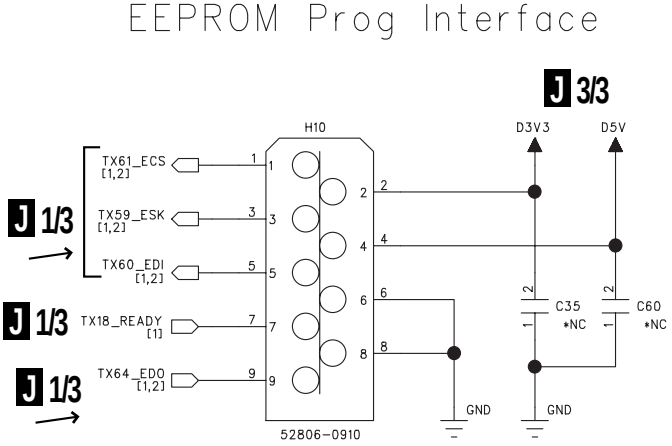
E

F

J 2/3 TX MODULE(2/3) (AXF7006)





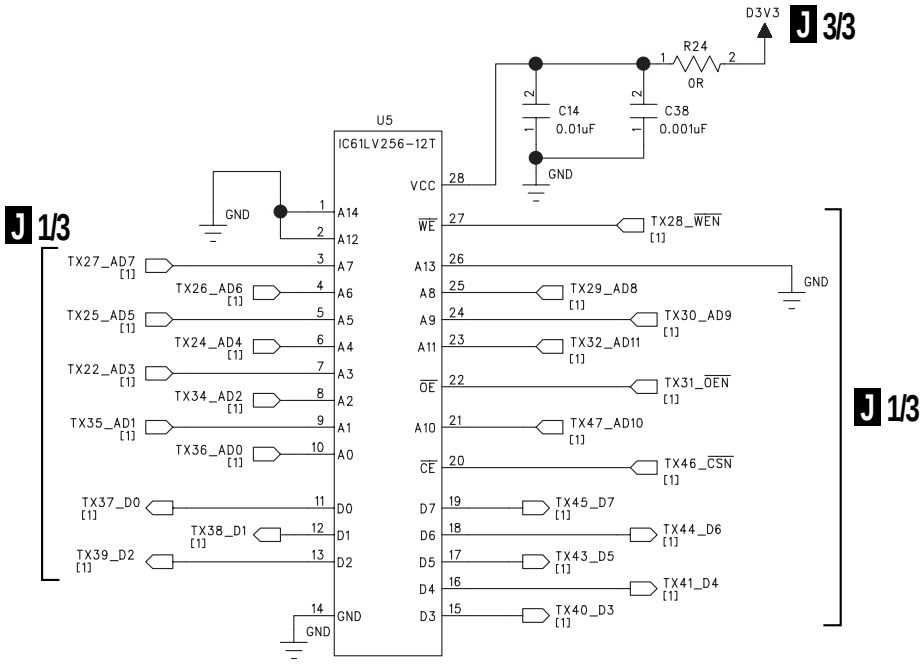


J 2/3

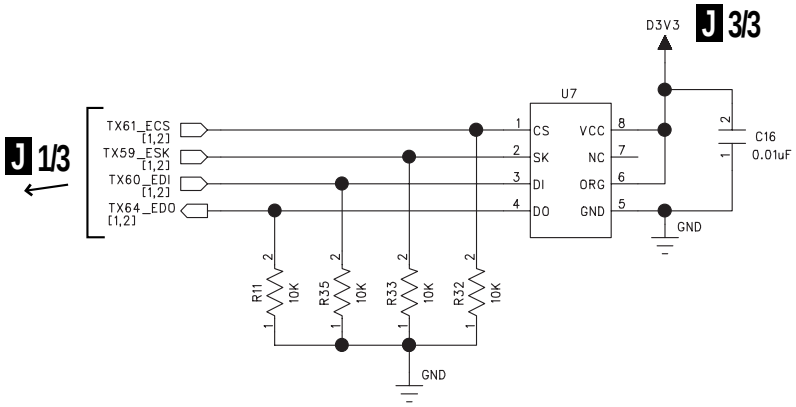
: The power supply is shown with the marked box.

TX Interface Connector
Power = +9VDC
Audio Left & Right (1Vrms)
channel no 2bit = Pin70 & 71 form FS2103TX
channelSel = pin8 from FS2103TX
Audiostatus = pin16 from FS2103TX

SRAM for FS



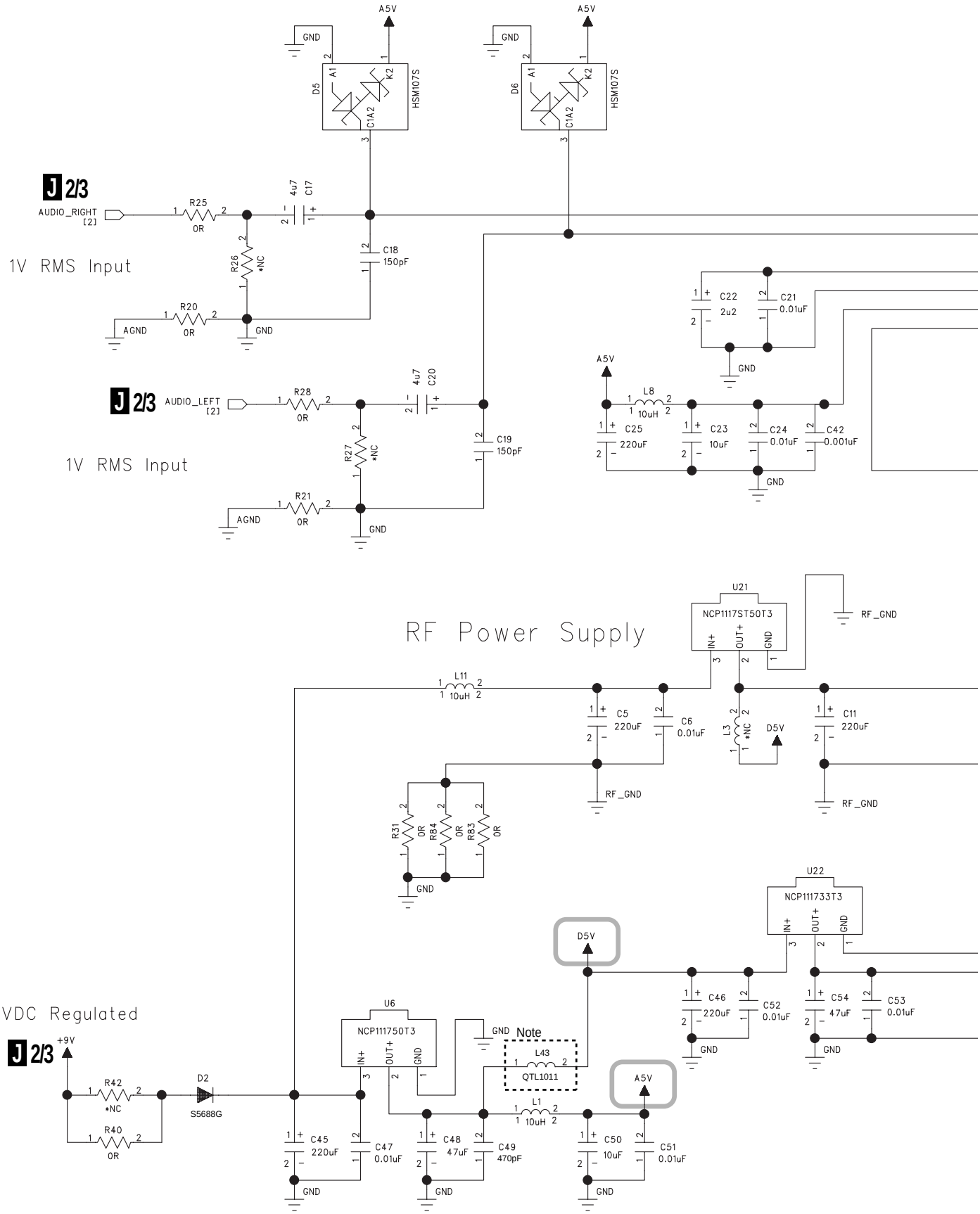
EEPROM for FS



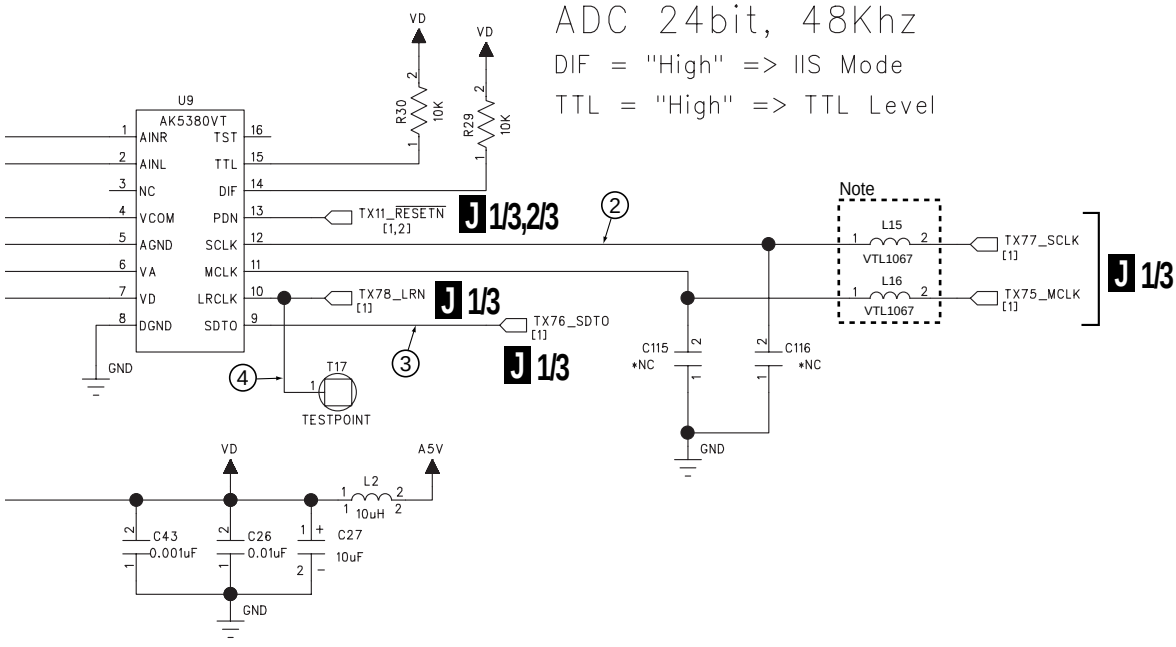
J 2/3

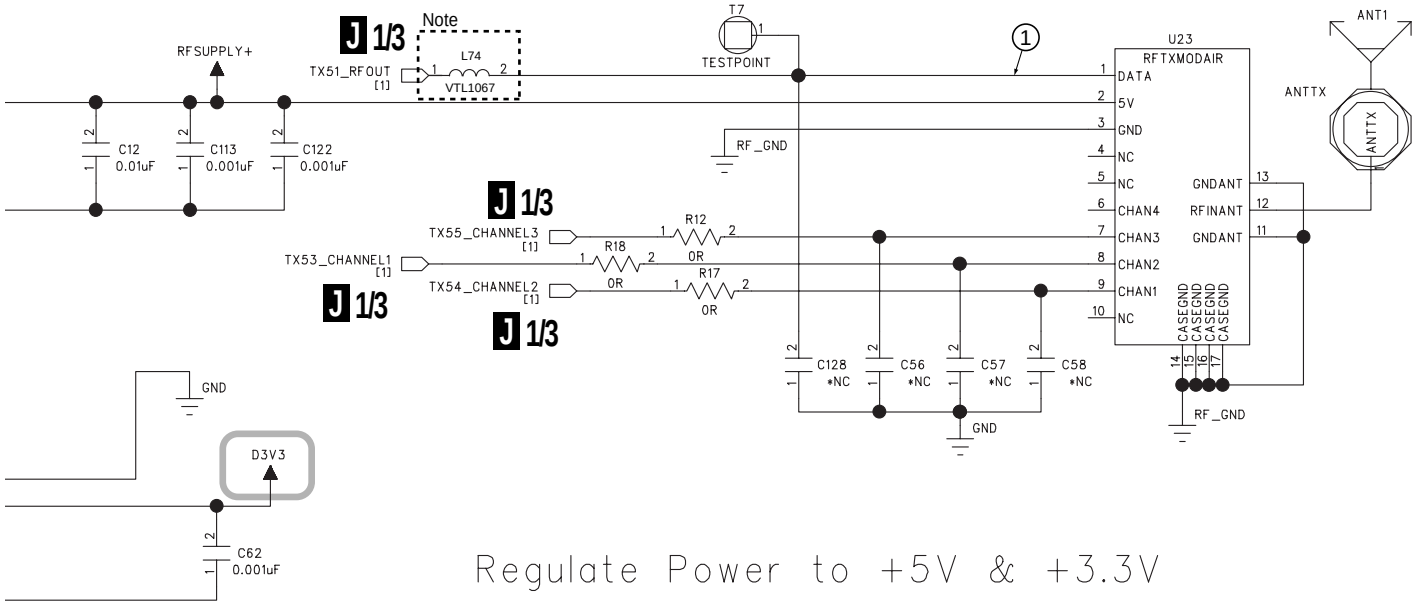
3.8 TX MODULE(3/3)

J 3/3 TX MODULE(3/3) (AXF7006)



FS2103TX for –MCU RF Module	AW RF Minus MCU Module Pin Assignment
FS: Chan2 = CLK FS: Chan1 = LE FS: Chan3 = DATA	AW: Chan1 = Clk AW: Chan2 = LE AW: Chan3 = DATA



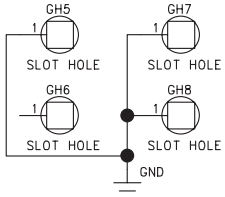


Regulate Power to +5V & +3.3V

Note : At this block, the assembled parts is different from the PCB silk.

PCB Silk	Assembled Parts
R15	L15
R16	L16
R43	L43
R74	L74

Metal Casing Slot Hole

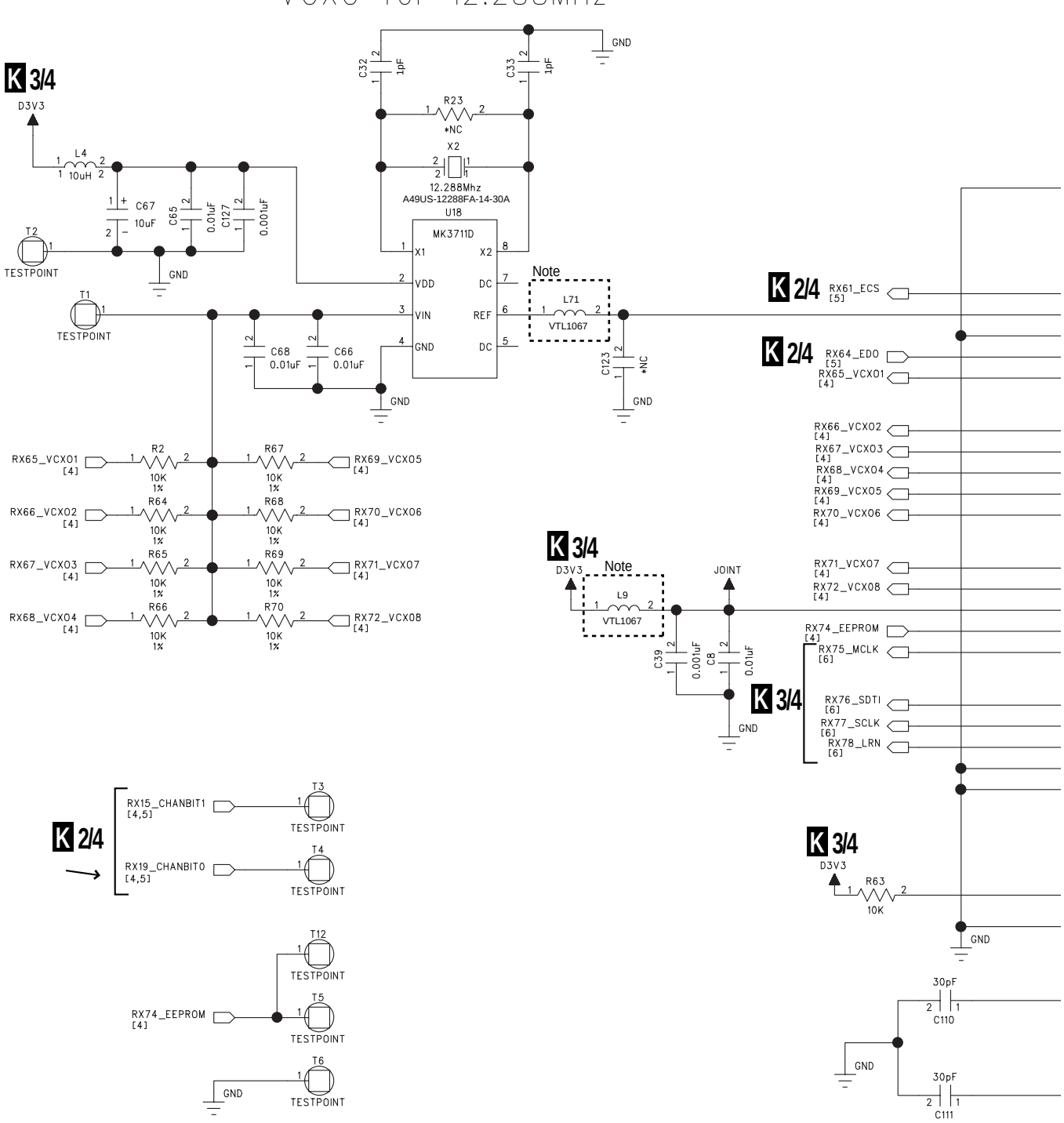


: The power supply is shown with the marked box.

J 3/3

3.9 RX MODULE(1/4)

K 1/4 RX MODULE(1/4) (AXF7008)

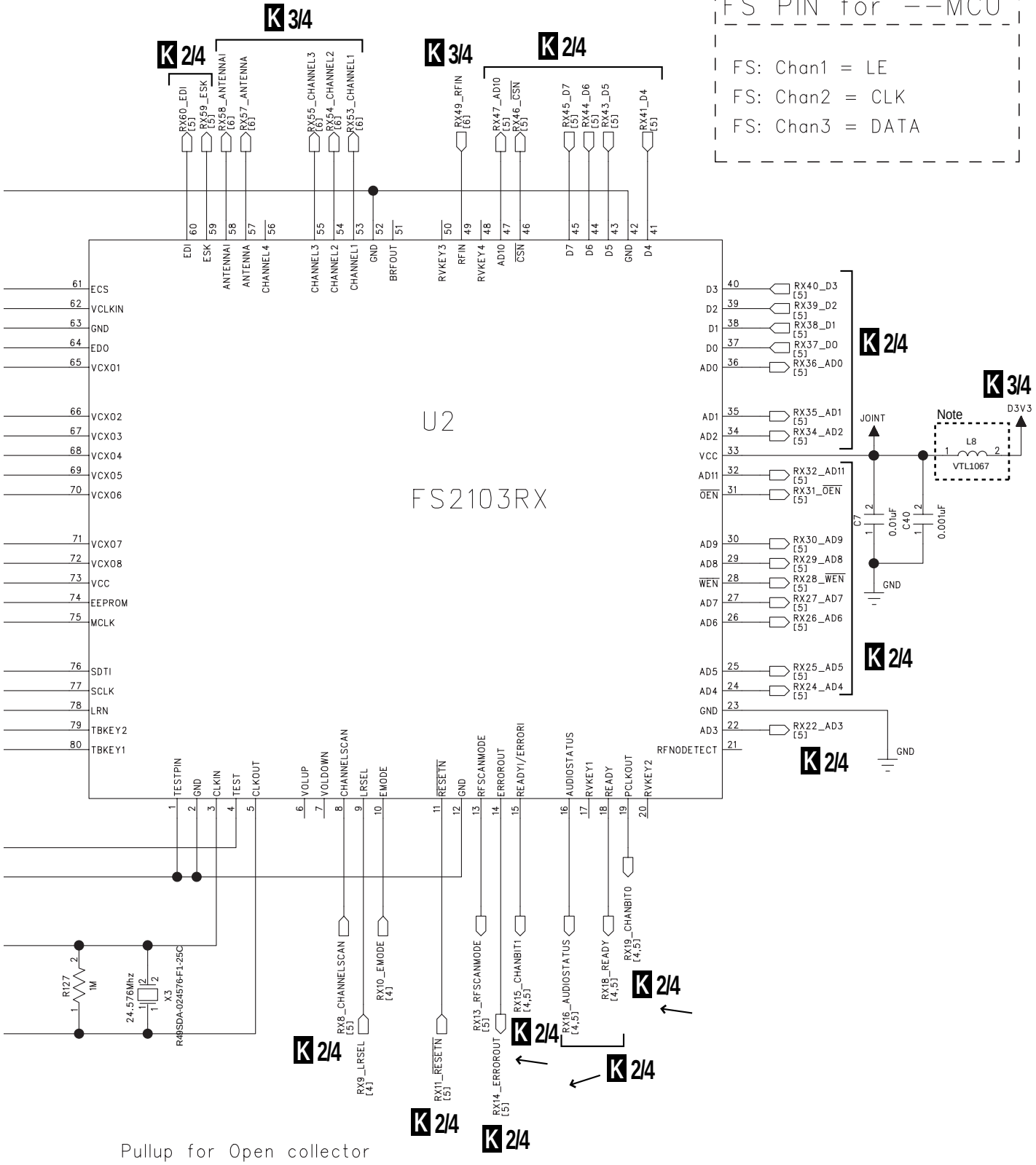


K 1/4

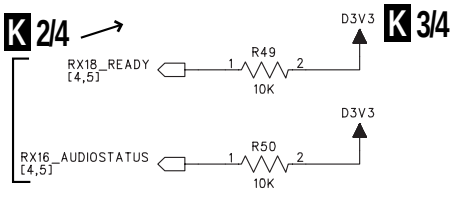
FS2103 RX

FS PIN for --MCU

FS: Chan1 = LE
FS: Chan2 = CLK
FS: Chan3 = DATA



Pullup for Open collector



Note : At this block, the assembled parts is different from the PCB silk.

(PCB Silk)	(Assembled Parts)
R 8	← L 8
R 9	← L9
R71	← L71

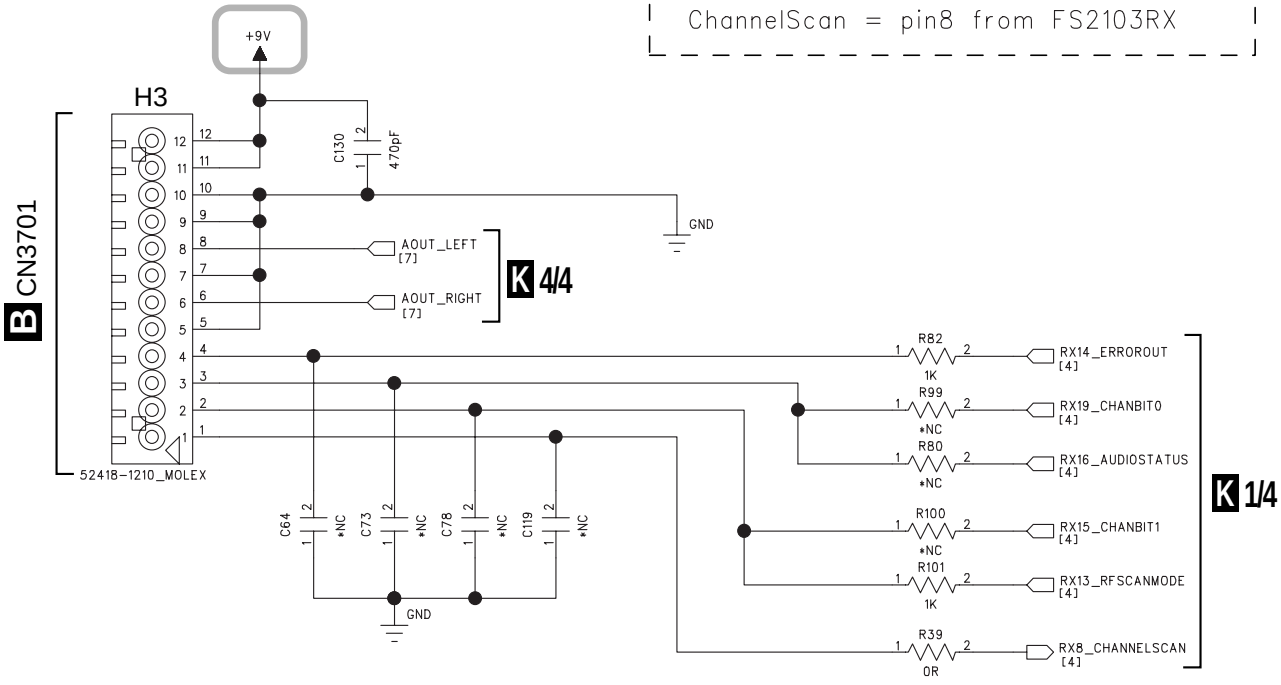
K 1/4

3.10 RX MODULE(2/4)

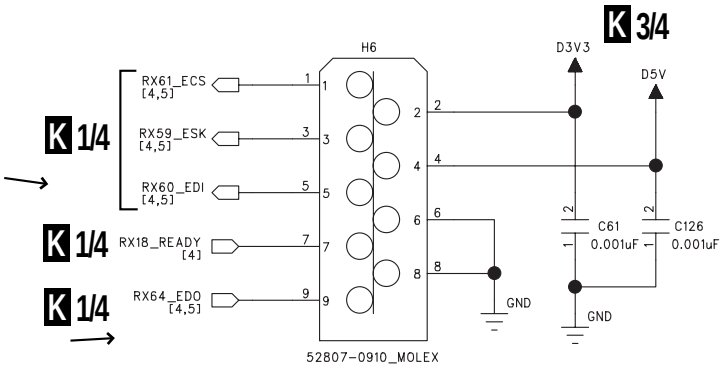
K 2/4 RX MODULE(2/4) (AXF7008)

RX Interface Connector

Power = +9V
Analog Out Left / Right
ErrorOut = Pin14 from FS2103RX
AudioStatus = pin16 from FS2103RX
RfScanMode = pin13 from FS2103RX
ChannelScan = pin8 from FS2103RX



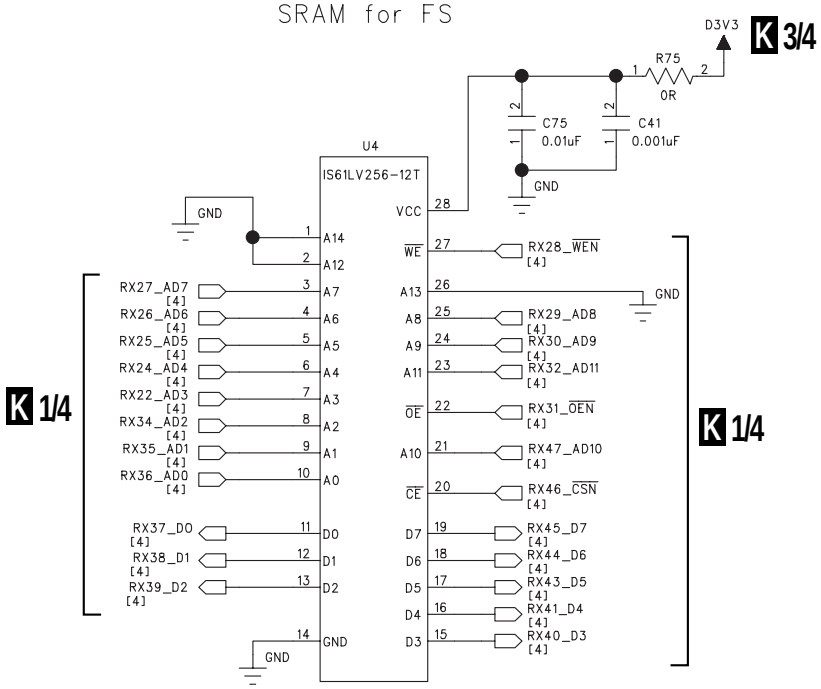
EEPROM Programming Interface

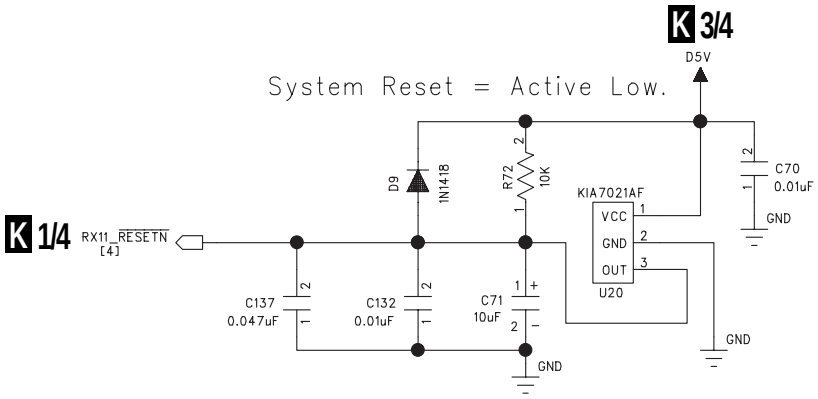


K 2/4

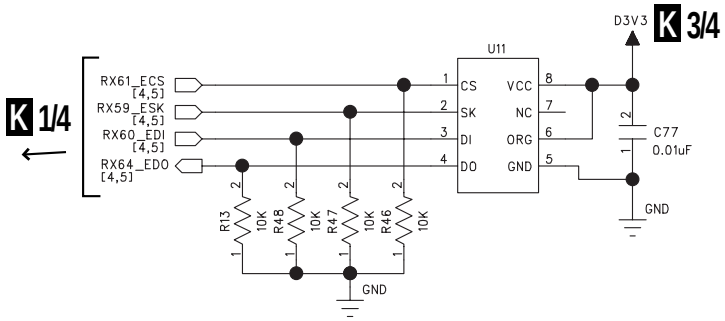
: The power supply is shown with the marked box.

SRAM for FS



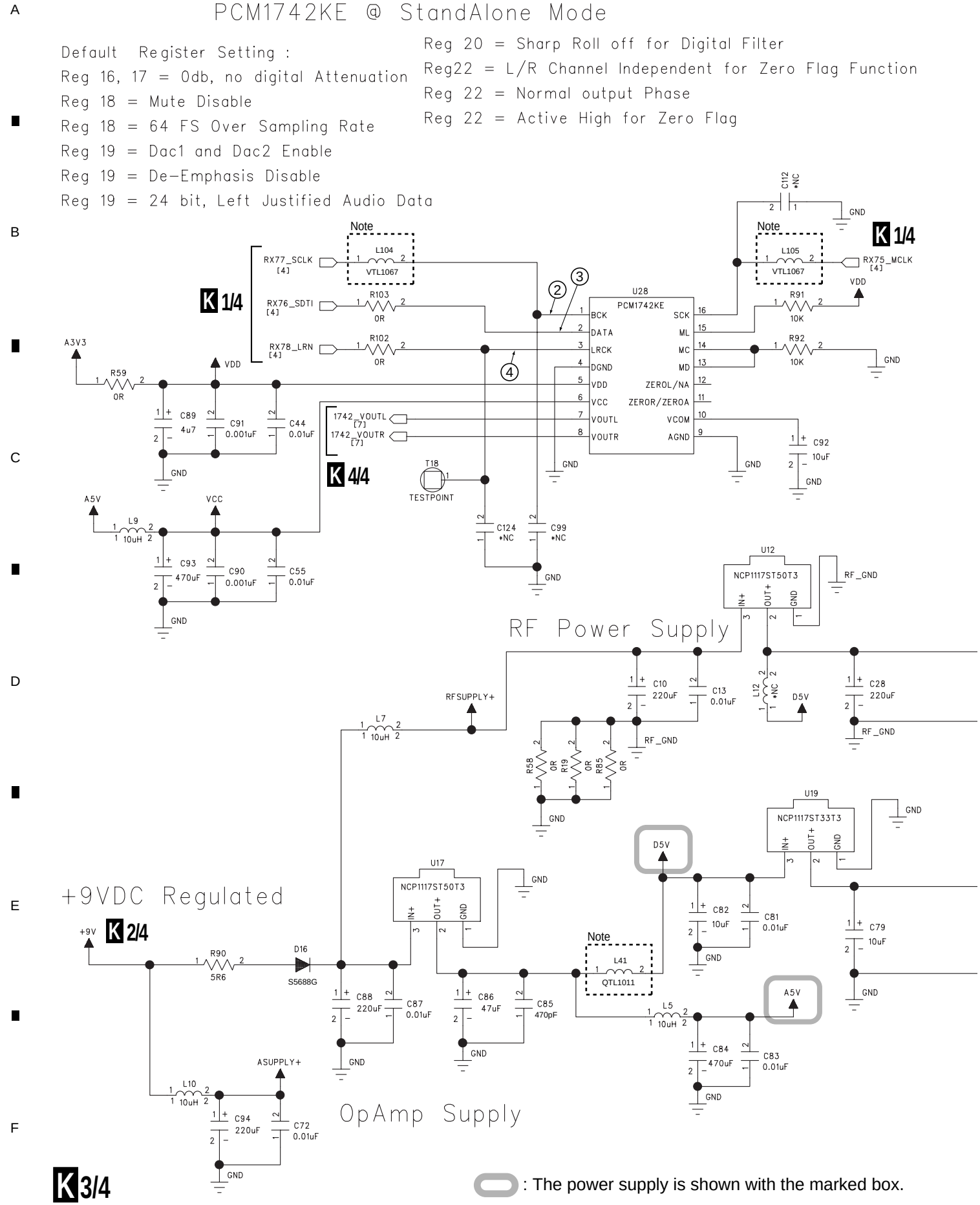


EEPROM for FS

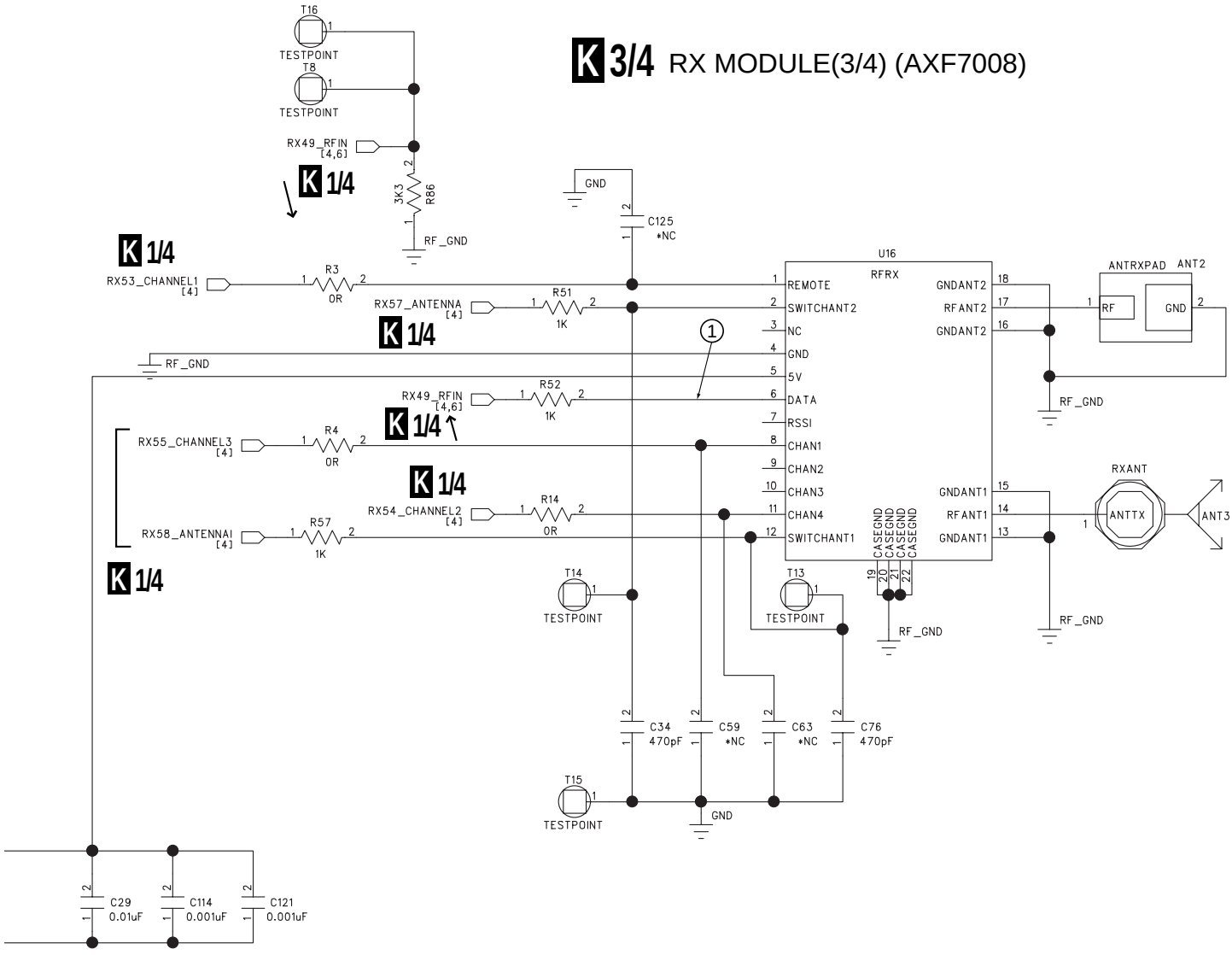


K 2/4

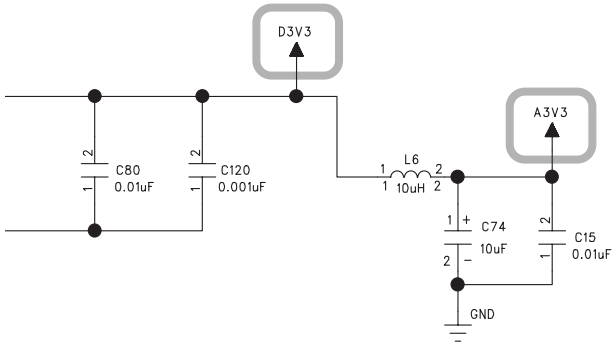
3.11 RX MODULE(3/4)



K 3/4 RX MODULE(3/4) (AXF7008)



Positive Power Regulation to +5V and +3.3V



Note : At this block, the assembled parts is different from the PCB silk.

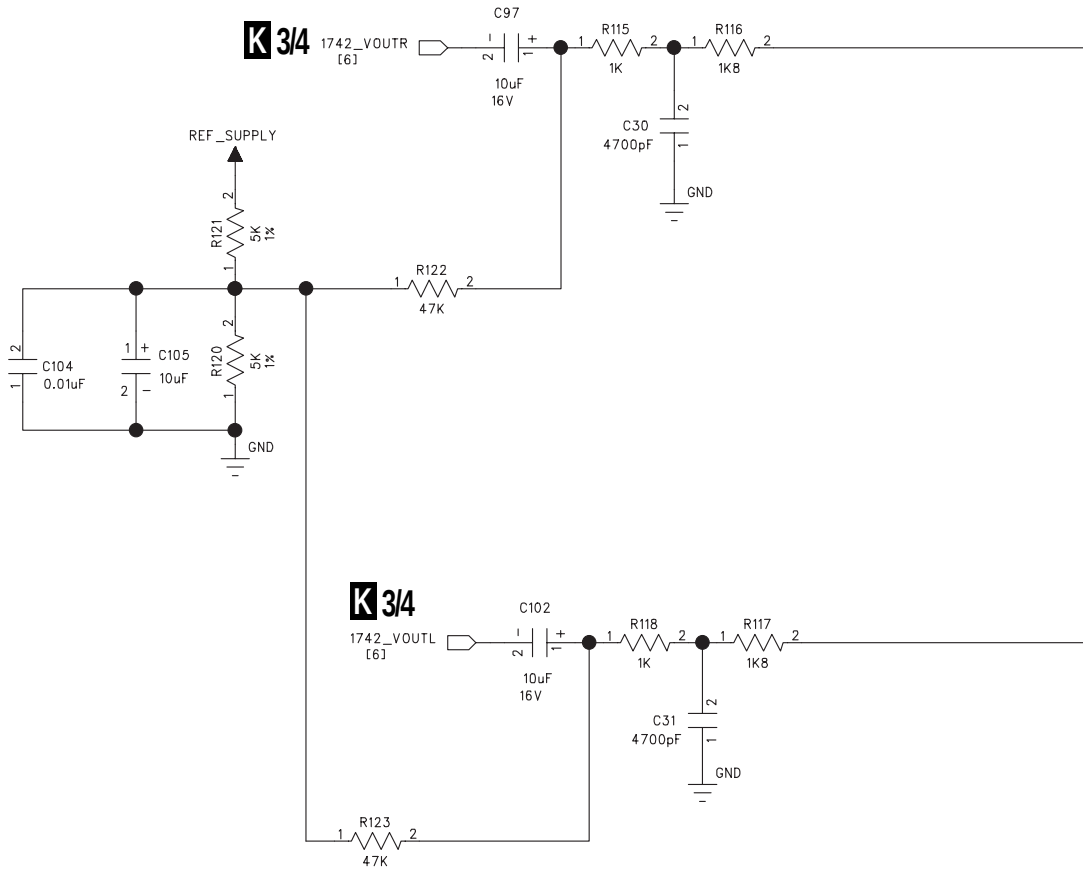
(PCB) Silk	(Assembled) Parts
R41	← L41
R104	← L104
R105	← L105

FS2103RX for --MCU	AW PINS for --MCU
FS: Chan1 = LE	AW: Remote / Unused = LE
FS: Chan3 = DATA	AW: Chan1 = Data
FS: Chan2 = CLK	AW: Chan4 = CLK

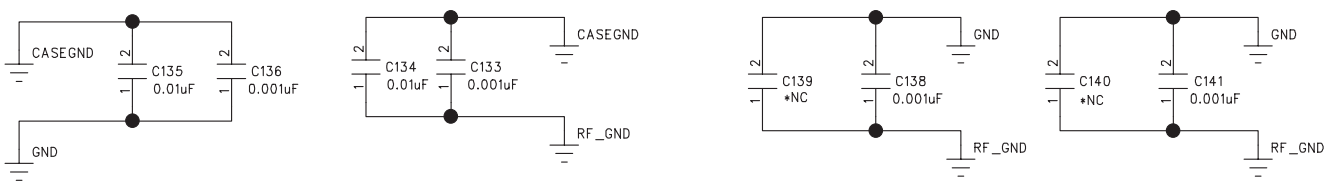
K 3/4

3.12 RX MODULE(4/4)

K 4/4 RX MODULE(4/4) (AXF7008)



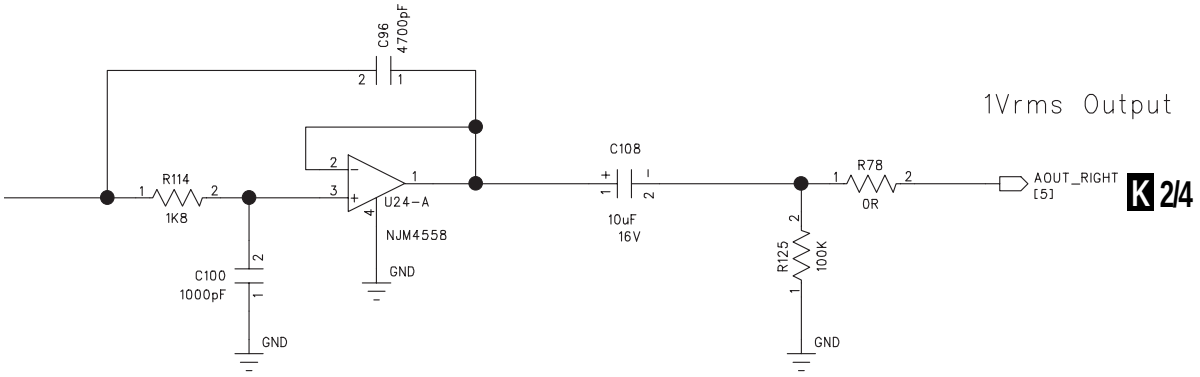
Isolation of Hidaka Gnd and System Gnd

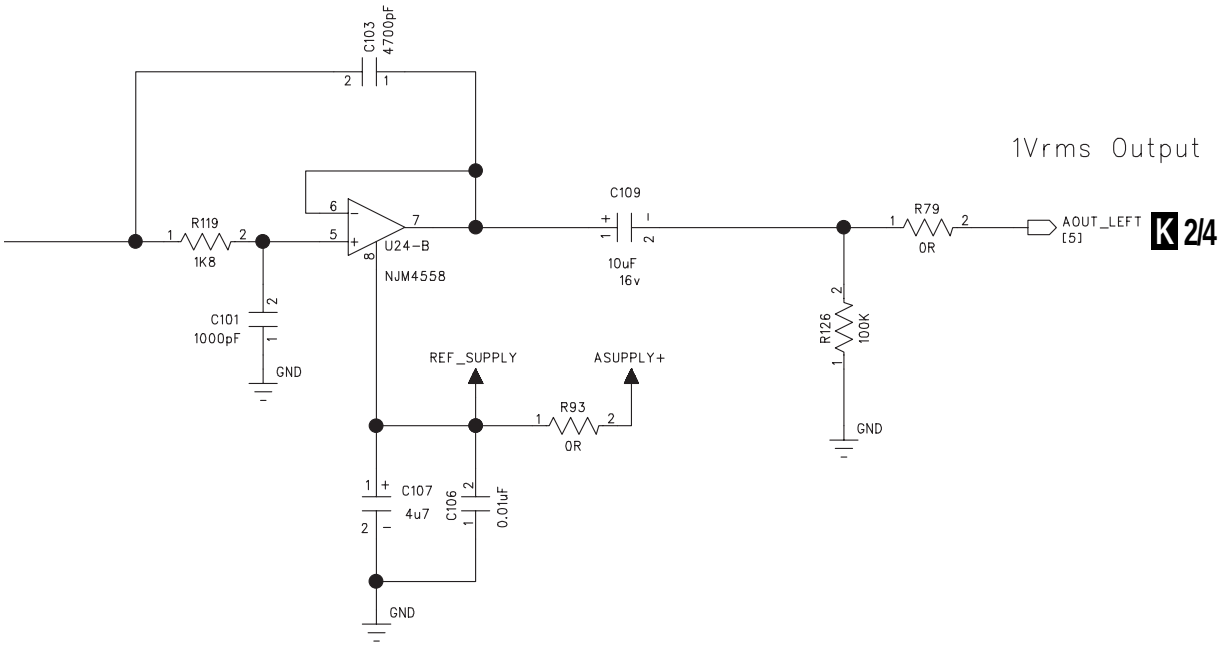


K 4/4

Post DAC Filter

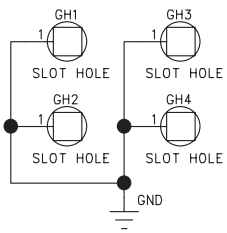
Unity-Gain Active Low Pass Filter , Gain = 1





Metal Casing Ground Slot

Slot Hole size = 2.6mm X 0.7mm

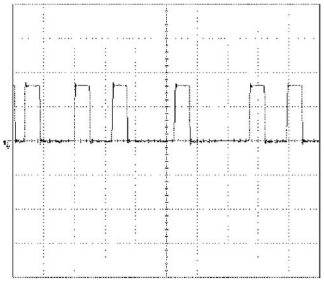


3.13 WAVEFORMS

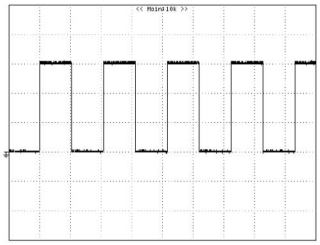
Note : The encircled numbers denote measuring point in the schematic diagram.

J TX MODULE

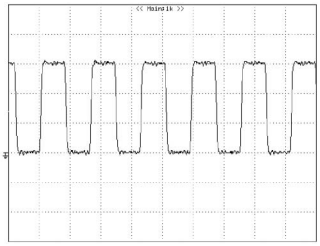
① **U23-Pin1**
V : 2V/div. H : 500nsec/div.



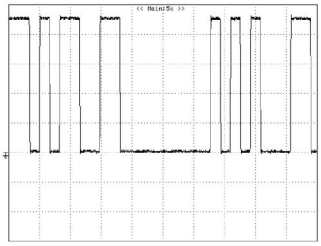
④ **U9-Pin10**
V : 2V/div. H : 10µsec/div.



② **U9-Pin12**
V : 2V/div. H : 200nsec/div.

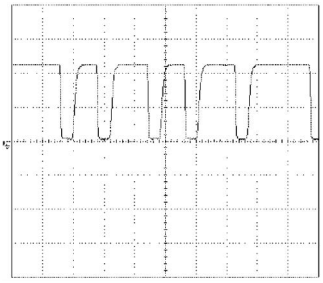


③ **U9-Pin9**
V : 2V/div. H : 1µsec/div.

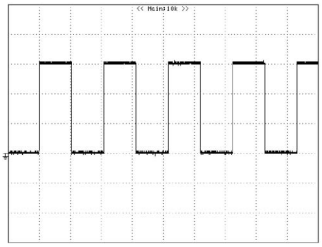


K RX MODULE

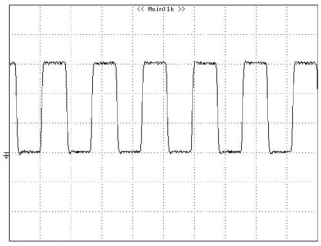
① **U16-Pin6**
V : 2V/div. H : 500nsec/div.



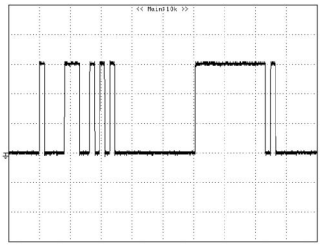
④ **U28-Pin3**
V : 2V/div. H : 10µsec/div.



② **U28-Pin1**
V : 2V/div. H : 200nsec/div.



③ **U282-Pin2**
V : 2V/div. H : 2µsec/div.



A

B

C

D

E

F

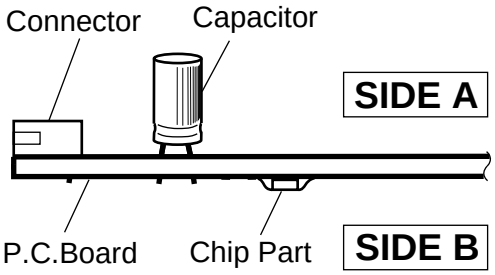
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

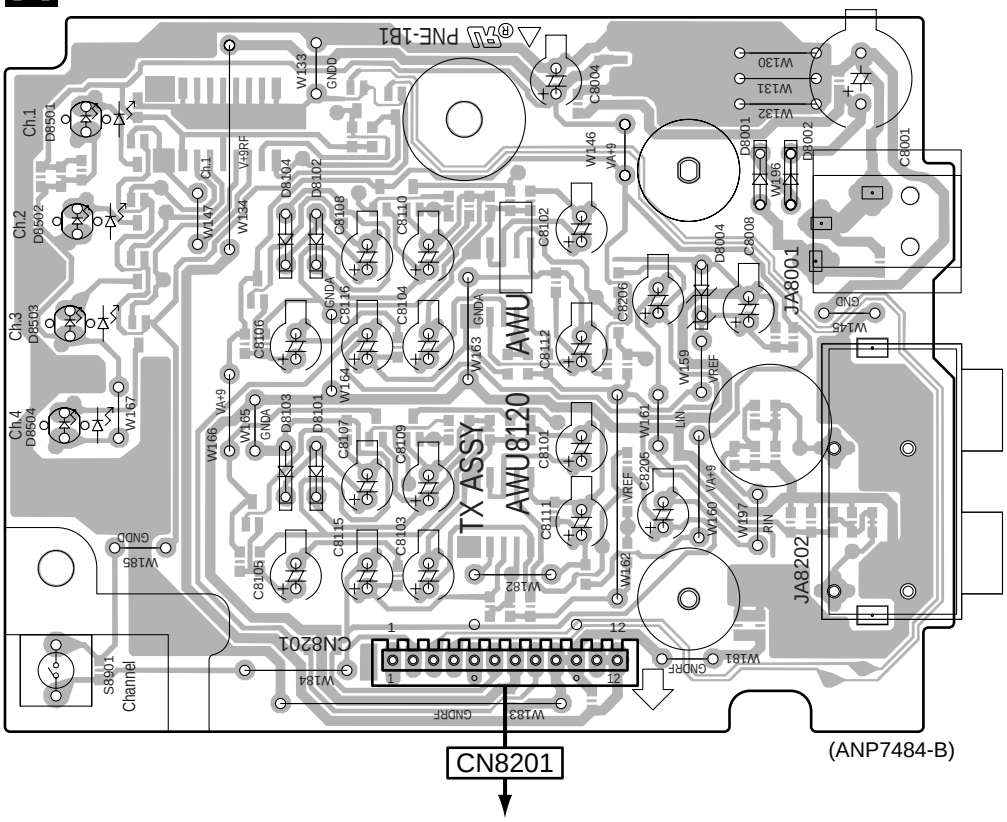
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 TX ASSY

SIDE A

A TX ASSY



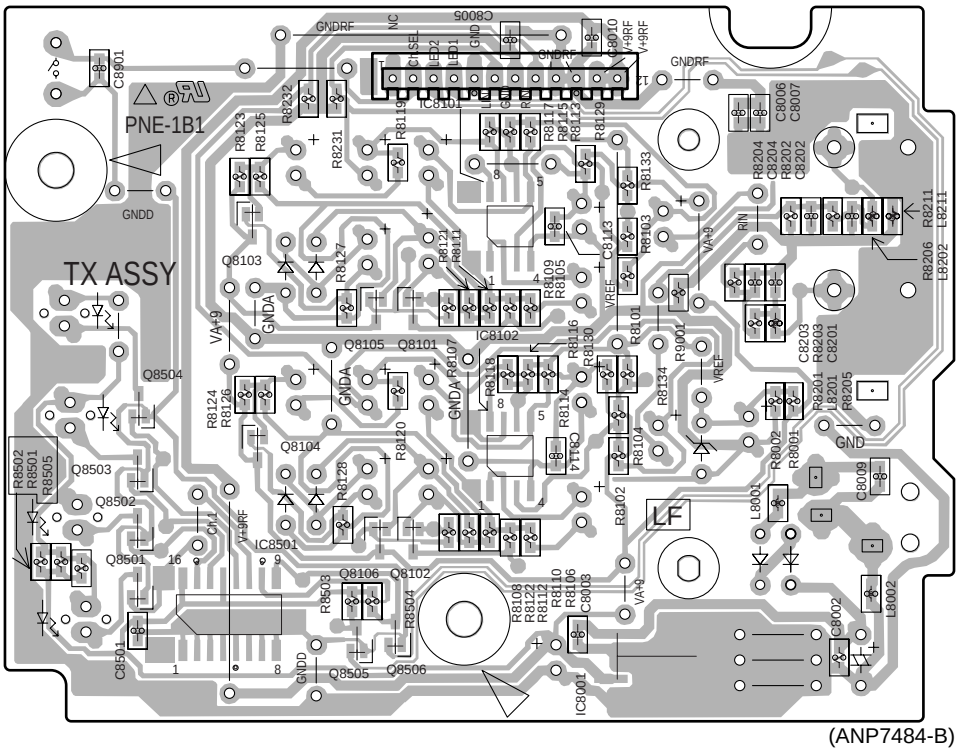
SIDE A

CN8201

J H2

SIDE B

A TX ASSY



SIDE B

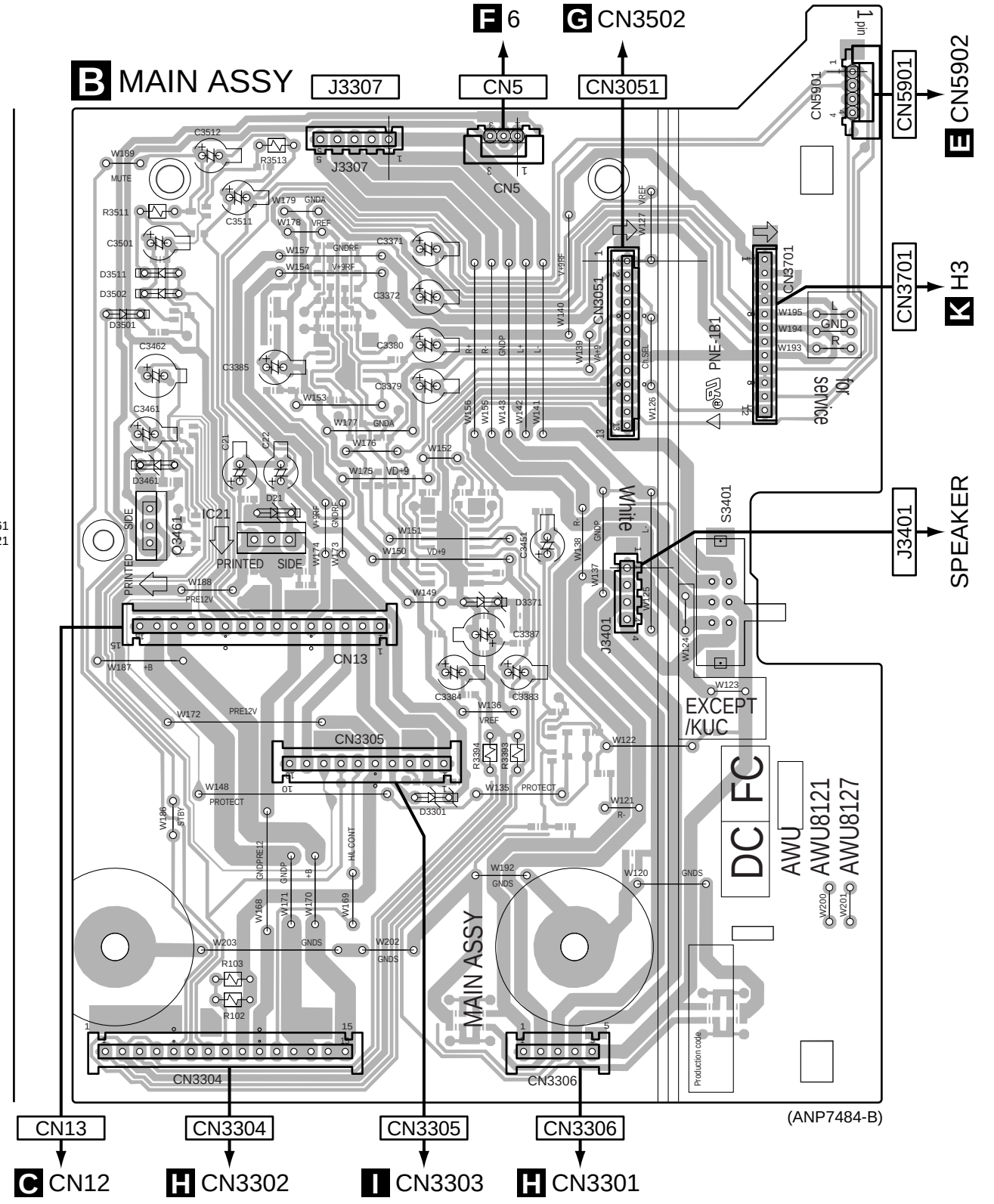
A

A

4.2 MAIN ASSY

SIDE A

SIDE A



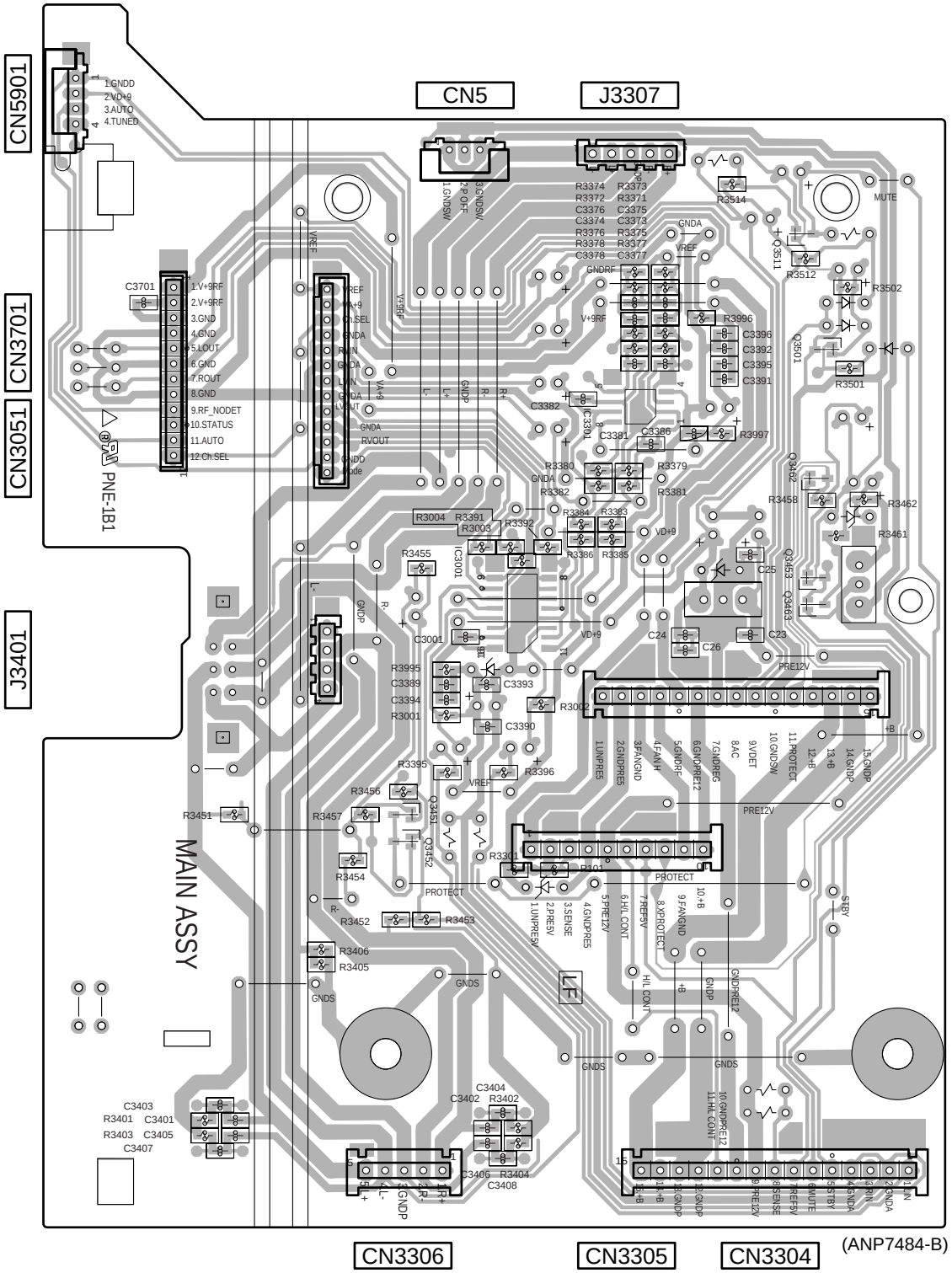
SIDE B

SIDE B

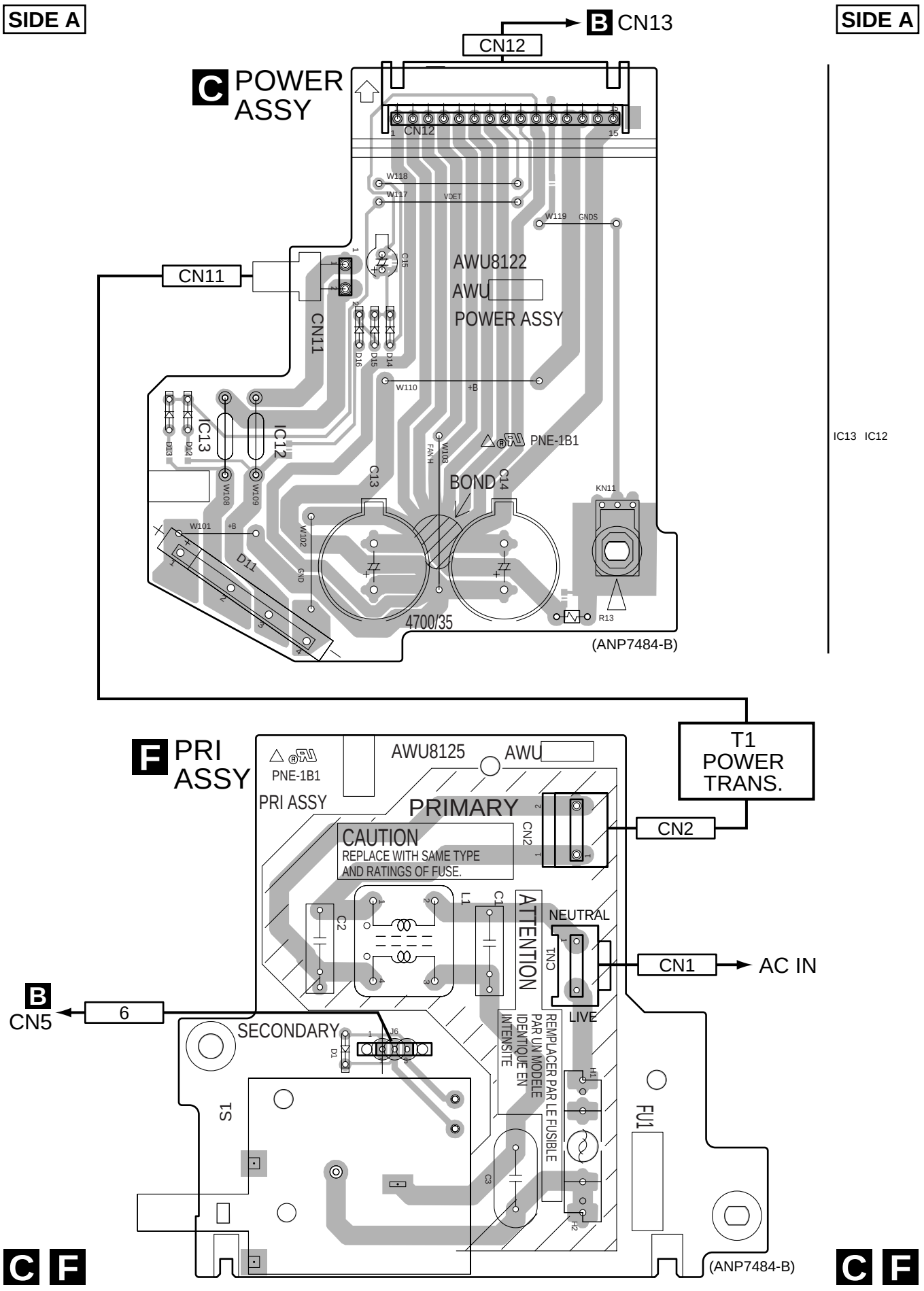
SIDE B

SIDE B

B MAIN ASSY



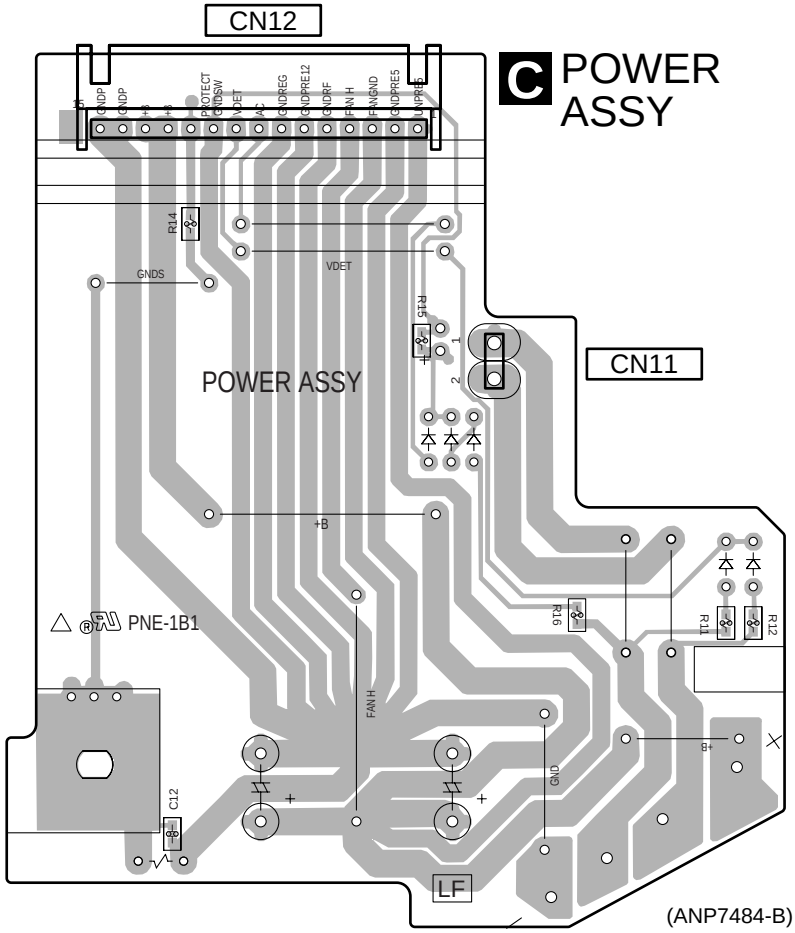
4.3 POWER and PRI ASSYS



SIDE B

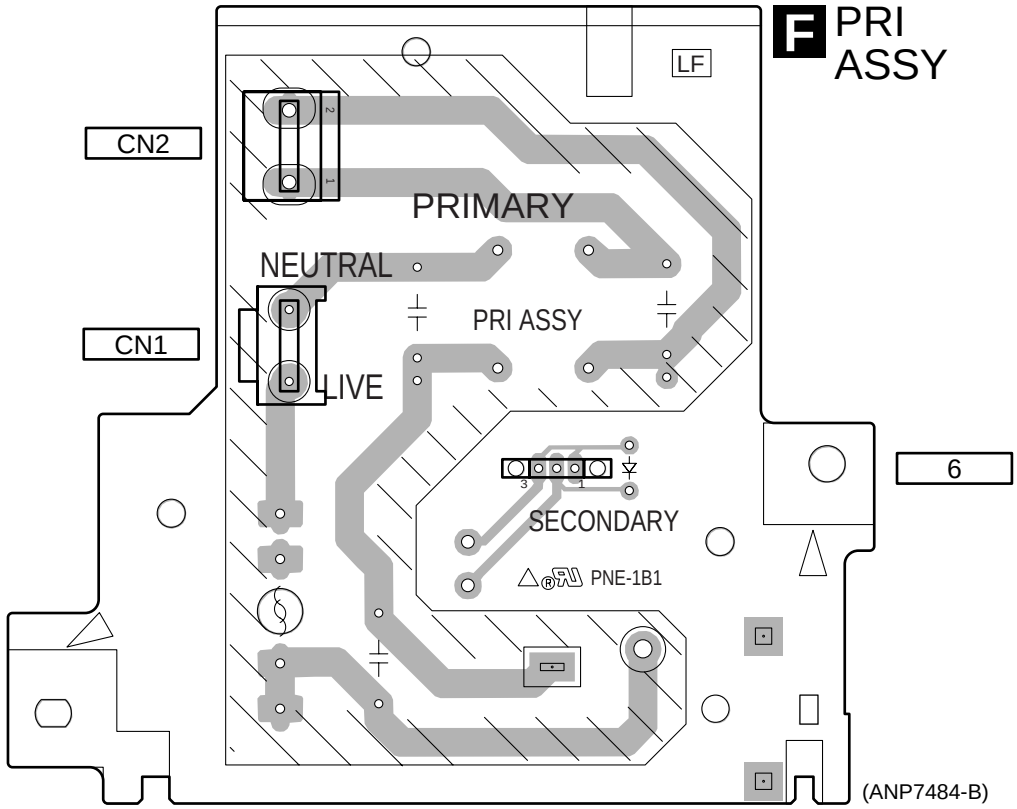
SIDE B

C POWER ASSY



(ANP7484-B)

F PRI ASSY



(ANP7484-B)

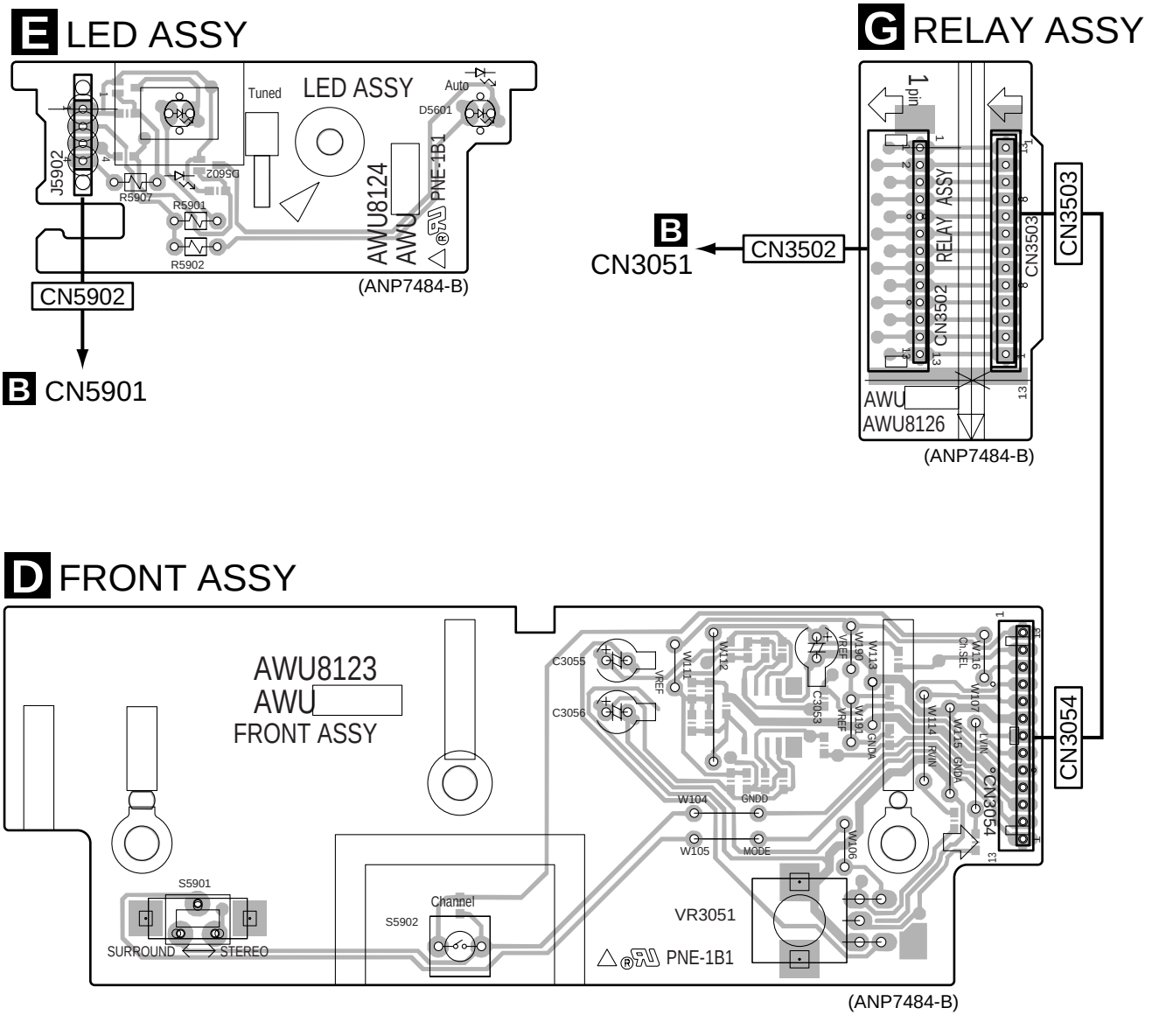
C F

C F

4.4 FRONT, LED and RELAY ASSYS

SIDE A

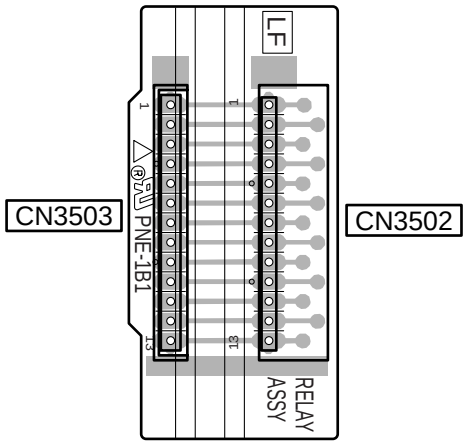
SIDE A



SIDE B

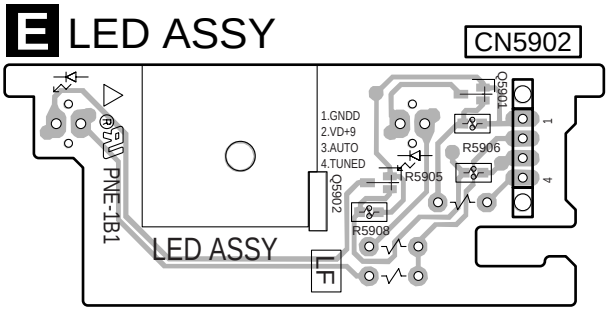
SIDE B

G RELAY ASSY



(ANP7484-B)

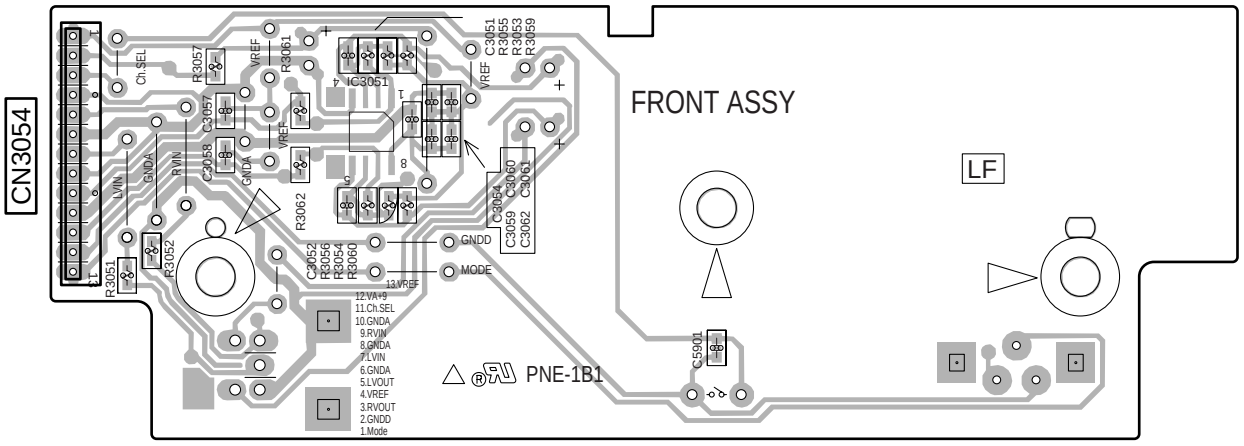
E LED ASSY



(ANP7484-B)

Q5902 Q5901

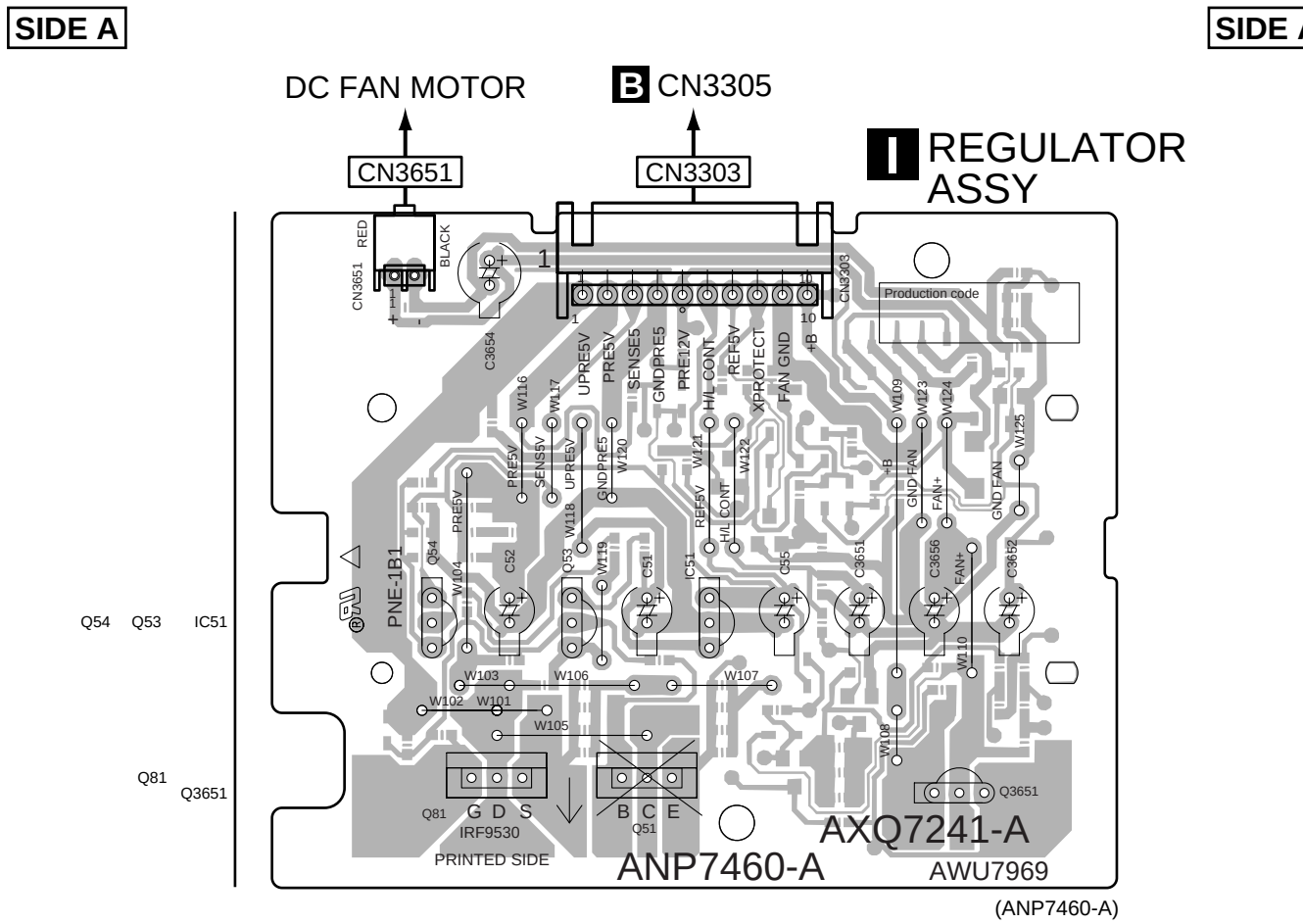
D FRONT ASSY

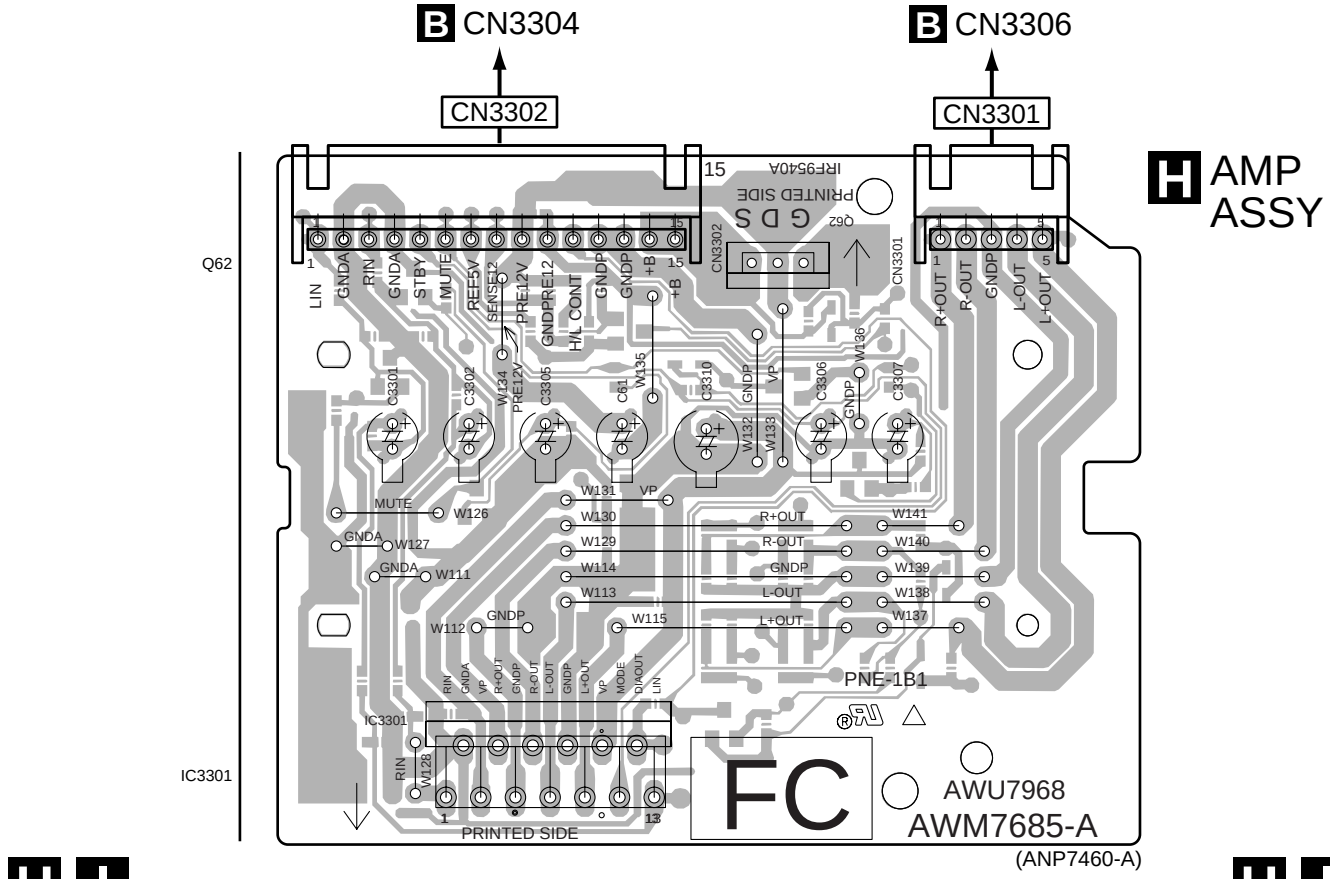


(ANP7484-B)

IC3051

4.5 AMP and REGULATOR ASSYS

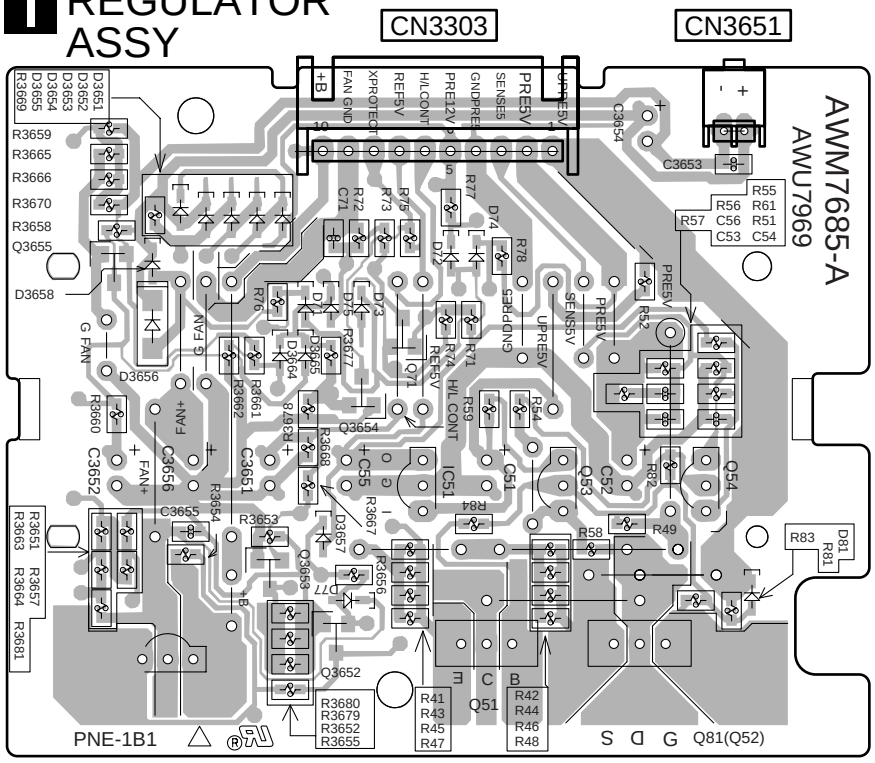




SIDE B

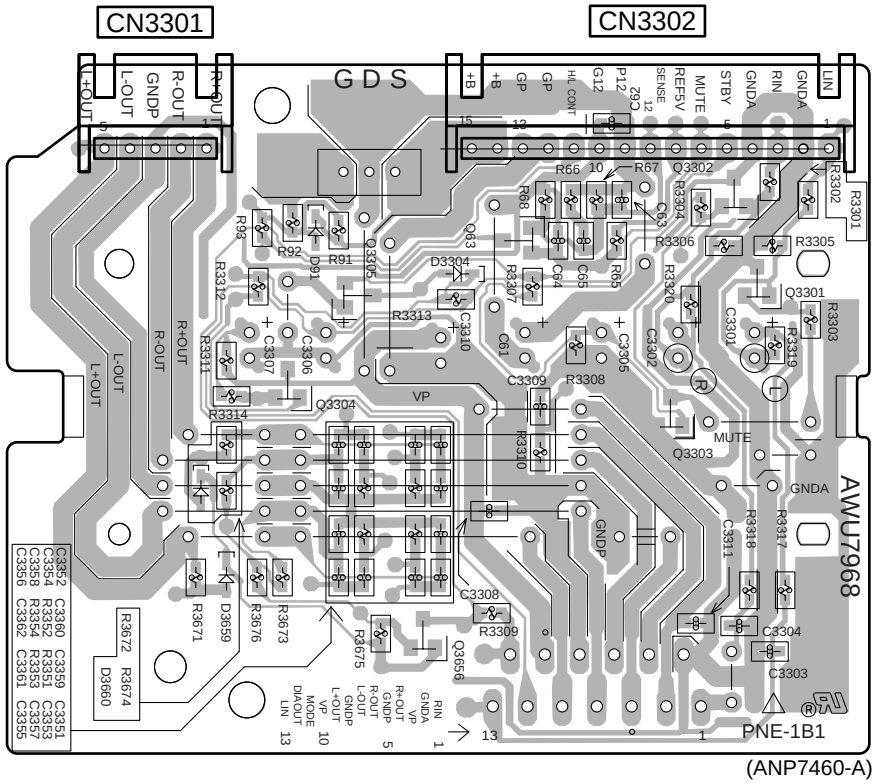
SIDE B

I REGULATOR ASSY



(ANP7460-A)

H AMP ASSY



(ANP7460-A)

4.6 TX MODULE

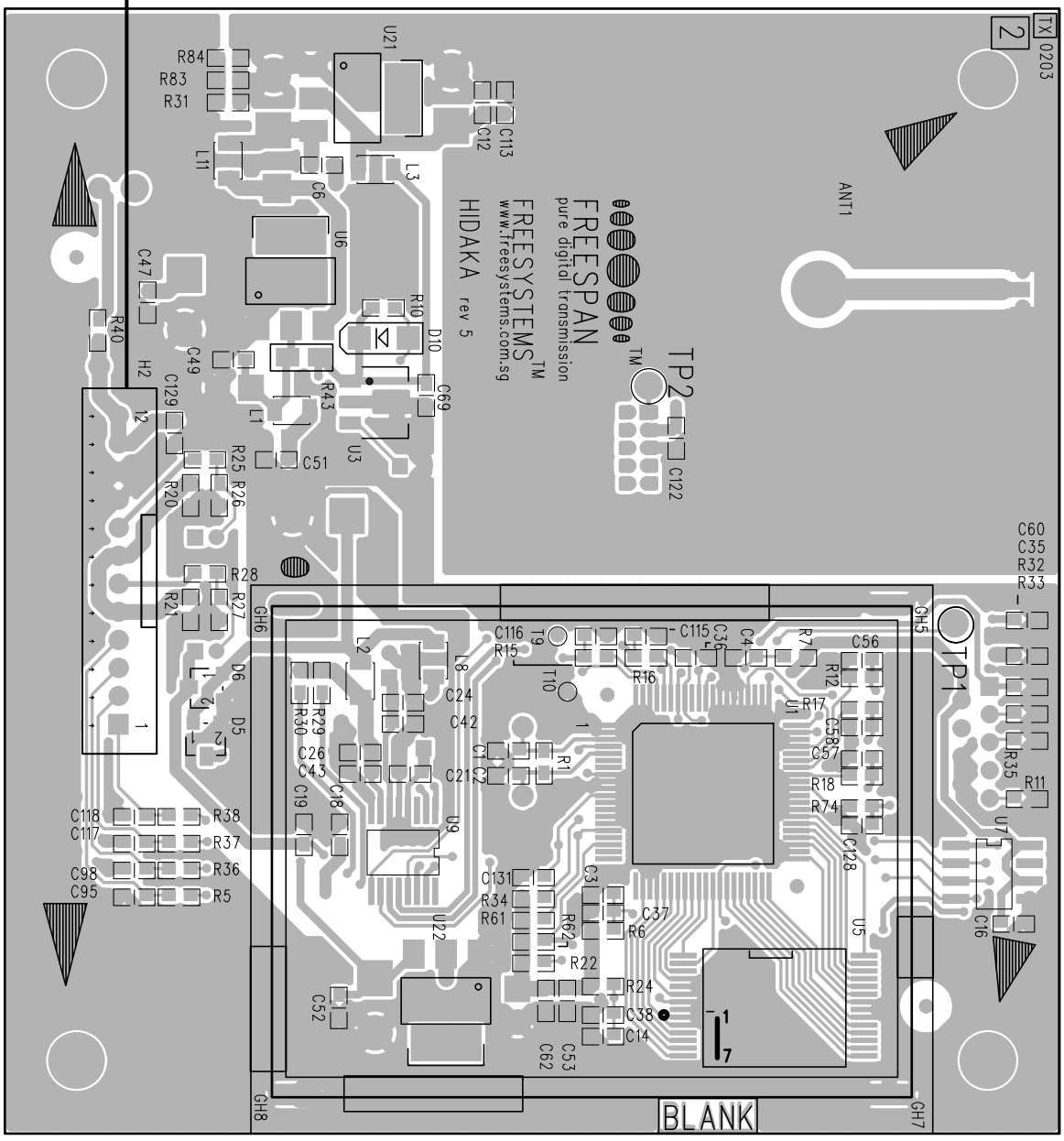
SIDE A

SIDE A

A CN8201

H2

J TX MODULE



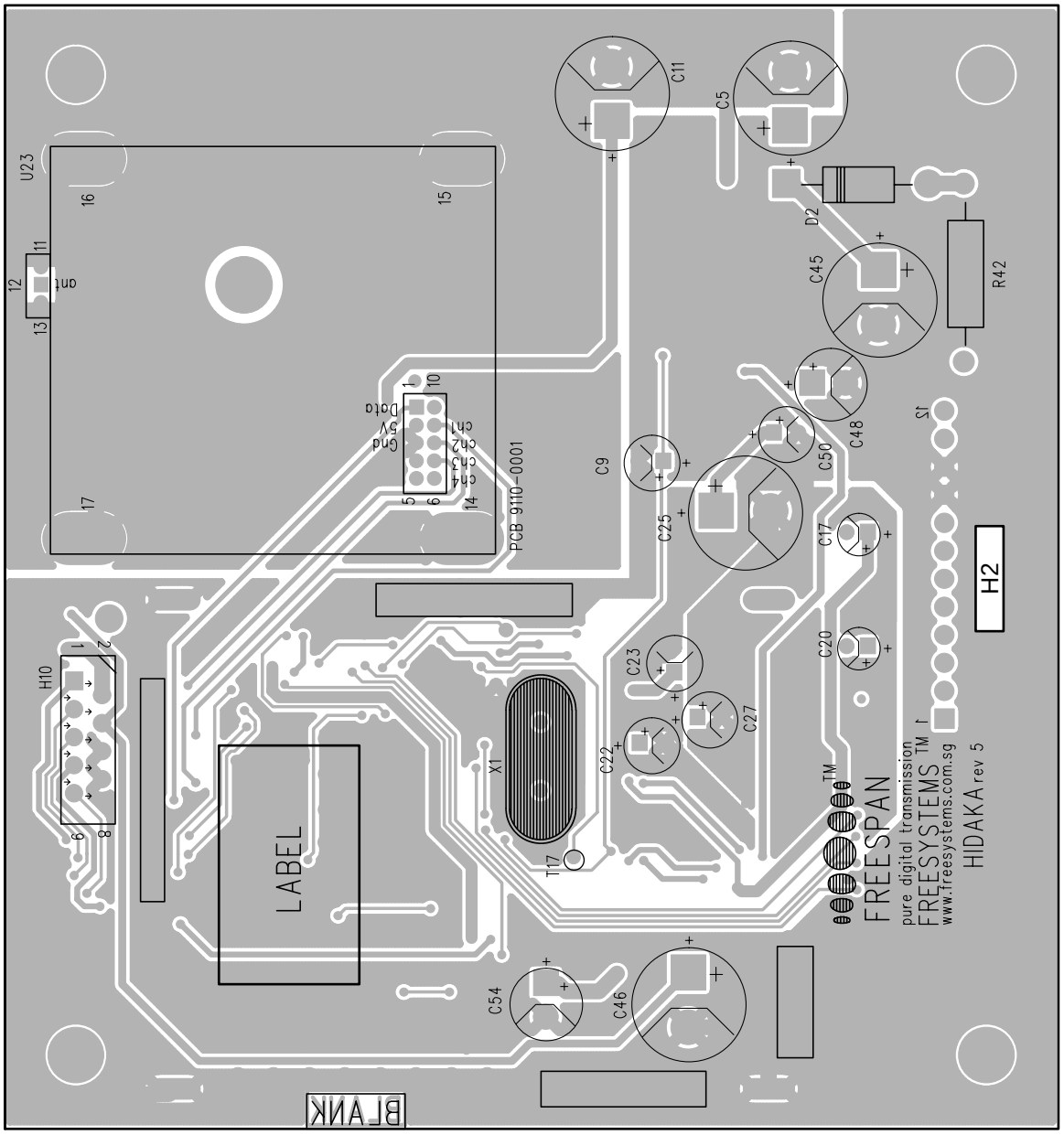
J

J

SIDE B

SIDE B

J TX MODULE

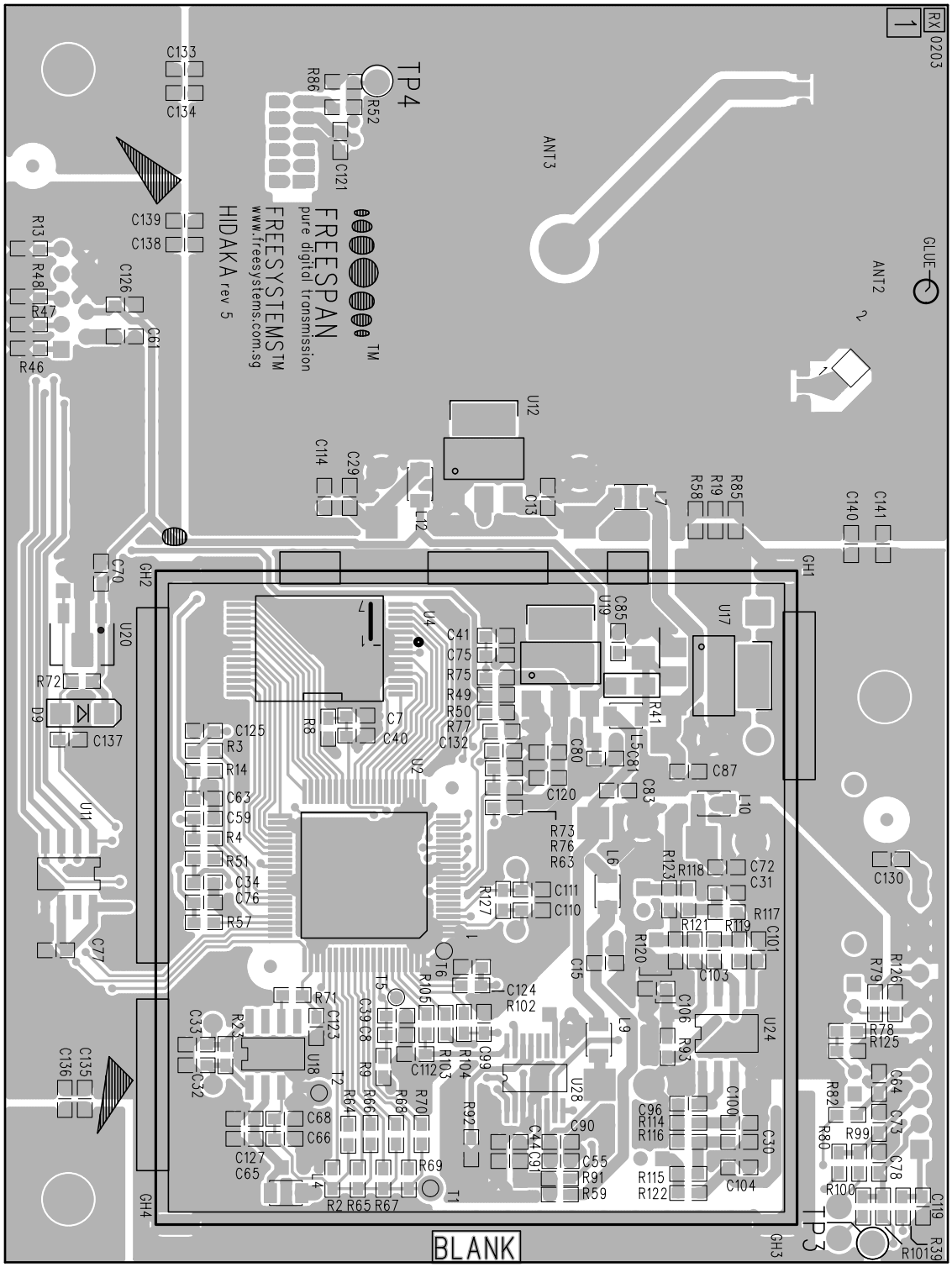


U2

4.7 RX MODULE

SIDE A **SIDE A**

RX MODULE

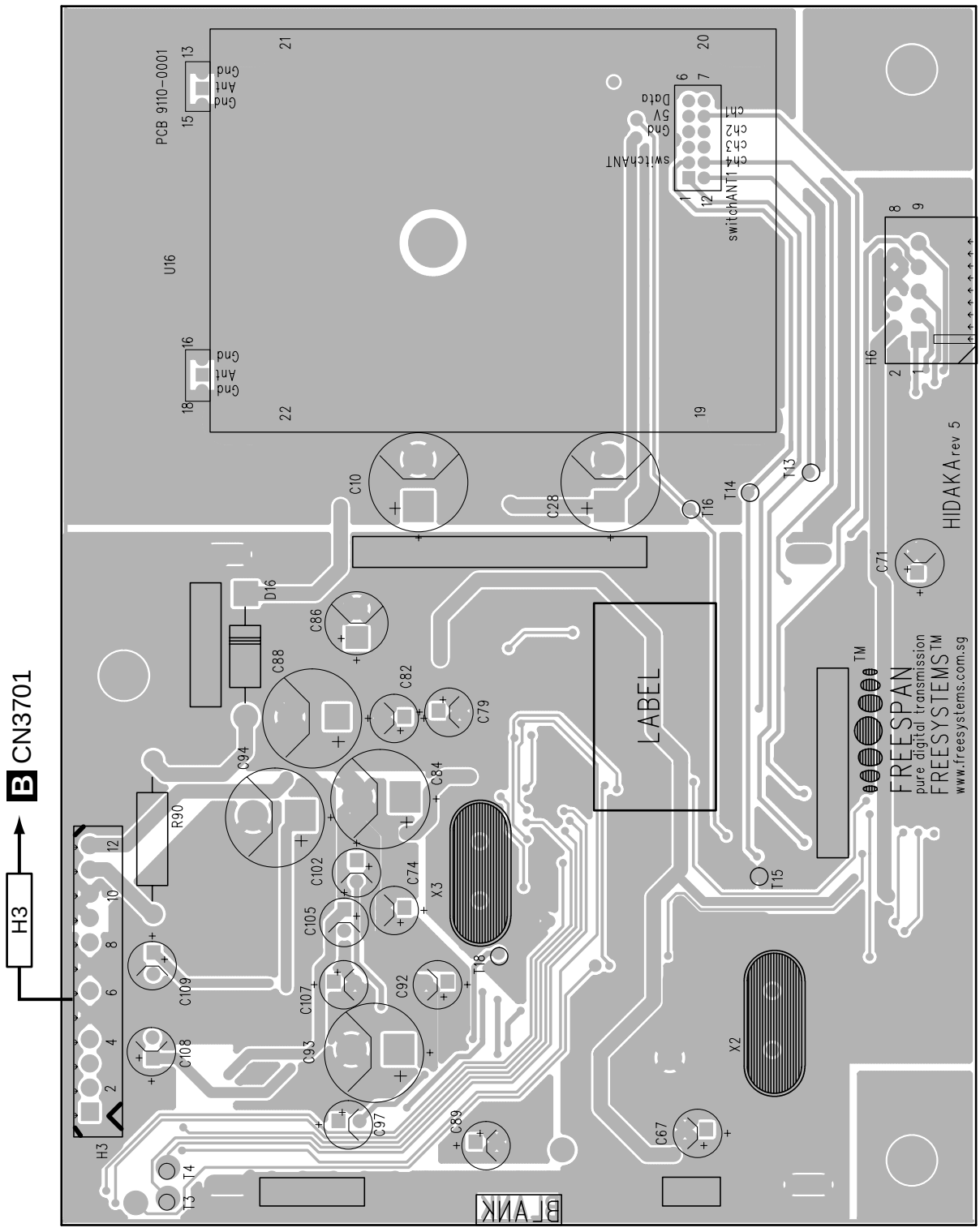


U20 U4 U12 U19 U17
U11 U18 U2 U28 U24

SIDE B

SIDE B

K RX MODULE



U16

5. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10[1]* →	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10[3]* →	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*		*RN2H R 5 0 K*
1 Ω	→ *1R0*		*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10[1]* →	*5621*	*RN1/4PC 5 6 2 1 F*

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP	1	COMPLEX ASSY	AWM7854
	2	TX ASSY	AWU8120
	2	MAIN ASSY	AWU8121
	2	POWER ASSY	AWU8122
	2	FRONT ASSY	AWU8123
	2	LED ASSY	AWU8124
	2	PRI ASSY	AWU8125
	2	RELAY ASSY	AWU8126
NSP	1	LOW POWER AMP ASSY	AWM7685
	2	AMP ASSY	AWU7968
	2	REGULATOR ASSY	AWU7969
	1	TX MODULE	AXF7006
	1	RX MODULE	AXF7008

A TX ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC8001		REGULATOR ICBA09F
	IC8501	LOGIC IC	BU4052BCF
	Q8501	DIGITAL TRANSISTOR	DTC124EUA
	Q8502	DIGITAL TRANSISTOR	DTC124EUA
	Q8503	DIGITAL TRANSISTOR	DTC124EUA
	Q8504	DIGITAL TRANSISTOR	DTC124EUA
	Q8505	DIGITAL TRANSISTOR	DTC124EUA
	Q8506	DIGITAL TRANSISTOR	DTC124EUA
⚠	D8001	DIODE	S5688G
	D8002	DIODE	S5688G
	D8501	LED(GREEN)	SLR-343MC
	D8502	LED(GREEN)	SLR-343MC
	D8503	LED(GREEN)	SLR-343MC
	D8504	LED(GREEN)	SLR-343MC

SWITCHES AND RELAYS

	S8901	SWITCH	ASG7013

CAPACITORS

	C8001	CAPACITOR	CEAT331M25
	C8004	ELECT. CAPACITOR	CEAT220M50
	C8005	CAPACITOR	CKSRYB102K50
	C8006	CAPACITOR	CKSRYB103K50
	C8007	CAPACITOR	CKSRYB102K50
	C8201	CAPACITOR	CCSRCH221J50
	C8202	CAPACITOR	CCSRCH221J50
	C8203	CAPACITOR	CCSRCH221J50
	C8204	CAPACITOR	CCSRCH221J50
	C8205	CAPACITOR	CEAT100M50
	C8206	CAPACITOR	CEAT100M50
	C8501	CAPACITOR	CKSRYB103K50
	C8901	CAPACITOR	CKSRYB103K50

RESISTORS

	Other Resistors		RS1/16S###J

OTHERS

	CN8201	CONNECTOR12P	12PL-FJ
	JA8001	DC POWER JACK	AKN7038
	JA8202	JACK	PKB1034

B MAIN ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC21	REGULATOR IC	NJM78M09F
	IC3001	LOGIC IC	BU4052BCF
	IC3301	IC	NJM4558MD
	Q3451	TRANSISTOR	2SA1576A
	Q3452	TRANSISTOR	2SA1576A
	Q3453	TRANSISTOR	2SC4081
⚠	Q3461	TRANSISTOR	2SD2012
	Q3462	CHIP DIGITAL TRANS.	DTA124EUA
	Q3463	CHIP DIGITAL TRANS.	DTA124EUA
	Q3501	TRANSISTOR	2SA1576A
	Q3511	TRANSISTOR	2SC4081
	D3301	ZENER DIODE	MTZJ12B
	D3371	ZENER DIODE	MTZJ4.7A
	D3461	ZENER DIODE	MTZJ13B
	D3501	DIODE	1SS133
	D3502	DIODE	1SS133
	D3511	DIODE	1SS133

CAPACITORS

	C21	CAPACITOR	CEAT1R0M50
	C22	CAPACITOR	CEAT470M16
	C23	CAPACITOR	CKSRYB103K50
	C24	CAPACITOR	CKSRYB103K50
	C3001	CAPACITOR	CKSRYB103K50
	C3371	CAPACITOR	CEAT100M50
	C3372	CAPACITOR	CEAT100M50
	C3373	CAPACITOR	CKSRYB682K50
	C3374	CAPACITOR	CKSRYB682K50
	C3375	CAPACITOR	CKSRYB223K50
	C3376	CAPACITOR	CKSRYB223K50
	C3377	CAPACITOR	CCSRCH101J50

Mark No.	Description	Part No.
C3378	CAPACITOR	CCSRCH101J50
C3379	CAPACITOR	CEAT100M50
C3380	CAPACITOR	CEAT100M50
C3383	ELECT. CAPACITOR	CEATR22M50
C3384	ELECT. CAPACITOR	CEATR22M50
C3385	CAPACITOR	CEAT100M50
C3386	CAPACITOR	CKSRYB103K50
C3387	CAPACITOR	CEAT471M6R3
C3389	CAPACITOR	CKSRYB103K50
C3390	CAPACITOR	CKSRYB103K50
C3391	CAPACITOR	CKSRYB103K50
C3392	CAPACITOR	CKSRYB103K50
C3401	CAPACITOR	CKSRYB102K50
C3402	CAPACITOR	CKSRYB102K50
C3405	CAPACITOR	CKSRYB102K50
C3406	CAPACITOR	CKSRYB102K50
C3451	CAPACITOR	CEAT101M10
C3461	CAPACITOR	CEAT100M50
C3462	ELECT. CAPACITOR	CEAT101M6R3
C3501	ELECT. CAPACITOR	CEAT3R3M50
C3511	CAPACITOR	CEAT470M16
C3512	CAPACITOR	CEAT1R0M50

RESISTORS

R102	RESISTOR	RD1/4PU333J
R3393	RESISTOR	RD1/4PU222J
R3394	RESISTOR	RD1/4PU222J
R3461	RESISTOR	RS1/10S681J
R3511	RESISTOR	RD1/4PU103J
R3513	RESISTOR	RD1/4PU563J
Other Resistors		RS1/16S###J

OTHERS

CN13	SOCKET 15-P	KP250NA15
CN3051	CONNECTOR	B13B-PH-K
CN3304	SOCKET 15-P	KP250NA15
CN3305	10P SOCKET	KP250NA10
CN3306	SOCKET 5-P	KP250NA5
CN3701	12P PLUG	53290-1210
CN5	3P JUMPER CONNECTOR	52147-0310
CN5901	4P JUMPER CONNECTOR	52147-0410
J3401	4P CABLE ASSY	ADX7432

C POWER ASSY

SEMICONDUCTORS

⚠ D11	DIODE	D5SBA20(B
D12	DIODE	1SS133
D13	DIODE	1SS133
D14	DIODE	1SS133
D15	DIODE	1SS133
D16	DIODE	1SS133

CAPACITORS

C12	CAPACITOR	CKSRYB473K50
C13	CAPACITOR	CEAT472M35
C14	CAPACITOR	CEAT472M35
C15	CAPACITOR	CEAT100M50

RESISTORS

R13	RESISTOR	RD1/4PU1R0J
Other Resistors		RS1/16S###J

Mark No.	Description	Part No.

OTHERS

CN11	CONNECTOR	B2PS-VH
CN12	PLUG 15-P	KM250NA15L
KN11	WRAPPING TERMINAL	VNF1084

D FRONT ASSY

SEMICONDUCTORS

IC3051	IC	NJM4558MD

SWITCHES AND RELAYS

S5901	SLIDE SWITCH	ASH7004
S5902	SWITCH	ASG7013

CAPACITORS

C3051	CAPACITOR	CCSRCH101J50
C3052	CAPACITOR	CCSRCH101J50
C3053	CAPACITOR	CEAT100M50
C3054	CAPACITOR	CKSRYB103K50
C3055	CAPACITOR	CEAT100M50
C3056	CAPACITOR	CEAT100M50
C3059	CAPACITOR	CKSRYB103K50
C3060	CAPACITOR	CKSRYB103K50
C5901	CAPACITOR	CKSRYB103K50

RESISTORS

VR3051	VR (50K)	ACS7038
Other Resistors		RS1/16S###J

OTHERS

CN3054	13P SOCKET	52418-1310

E LED ASSY

SEMICONDUCTORS

Q5901	TRANSISTOR	2SC4081
Q5902	TRANSISTOR	2SC4081
D5601	LED(GREEN)	SLR-343MC
D5602	LED(GREEN)	SLR-343MC

RESISTORS

R5901	RESISTOR	RD1/4PU331J
R5902	RESISTOR	RD1/4PU331J
R5907	RESISTOR	RD1/4PU102J
Other Resistors		RS1/16S###J

OTHERS

CN5902	4P CABLE HOLDER	51048-0400
J5902	JUMPER WIRE	D20PYY0415E

F PRI ASSY

SEMICONDUCTORS

D1	DIODE	1SS133

SWITCHES AND RELAYS

⚠ S1	PUSH SWITCH	ASA7001

COILS AND FILTERS

⚠ L1	LINE FILTER	ATF7024

CAPACITORS

⚠ C1	FILM CAPACITOR	ACE7022
⚠ C2	FILM CAPACITOR	ACE7022

Mark	No.	Description	Part No.
⚠	C3	CKA (10000P/AC250V)	ACG7033

OTHERS

		63P CABLE HOLDER	51048-0300
⚠	CN1	AC CORD SOCKET	BKP1751
⚠	CN2	CONNECTOR	B2P3-VH
	H1	FUSE CLIP	AKR7001
	H2	FUSE CLIP	AKR7001
	J6	JUMPER WIRE	D20PYY0310E

G RELAY ASSY

OTHERS

CN3502	KR CONNECTOR	S13B-PH-K
CN3503	13P PLUG	53290-1310

H AMP ASSY

SEMICONDUCTORS

⚠	IC3301	POWER AMP. IC	TDA8560
	Q3304	TRANSISTOR	2SC2412K
	Q3305	TRANSISTOR	DTC124EK
	Q3656	TRANSISTOR	2SA1037K
⚠	Q62	POWER MOS FET	IRF9540
	Q63	TRANSISTOR	2SC2412K
	D3304	CHIP ZENER DIODE	UDZS4.7B
	D3659	DIODE	1SS355
	D3660	DIODE	1SS355
	D91	CHIP ZENER DIODE	UDZS18B

CAPACITORS

C3301	ELECT. CAPACITOR	CEATR47M50
C3302	ELECT. CAPACITOR	CEATR47M50
C3303	CAPACITOR	CKSRYB222K50
C3304	CAPACITOR	CKSRYB222K50
C3306	CAPACITOR	CEAT100M50
C3307	ELECT. CAPACITOR	CEAT220M50
C3309	CAPACITOR	CKSRYB103K50
C3310	ELECT. CAPACITOR	CEAT101M25
C3311	CAPACITOR	CKSRYB103K50
C3351	CAPACITOR	CKSRYB104K16
C3352	CAPACITOR	CKSRYB104K16
C3353	CAPACITOR	CKSRYB104K16
C3354	CAPACITOR	CKSRYB104K16
C3355	CAPACITOR	CKSRYB104K16
C3356	CAPACITOR	CKSRYB104K16
C3357	CAPACITOR	CKSRYB104K16
C3358	CAPACITOR	CKSRYB104K16
C61	ELECT. CAPACITOR	CEAT470M25

RESISTORS

R67	RESISTOR	RS1/16S6801F
R68	CHIP RESISTOR	RS1/16S2201F
Other Resistors		RS1/16S###J

OTHERS

CN3301	PLUG 5-P	KM250NA5L
CN3302	PLUG 15-P	KM250NA15L

Mark	No.	Description	Part No.

I REGULATOR ASSY

SEMICONDUCTORS

⚠	IC51	IC	NJM78L05
⚠	Q3651	TRANSISTOR	2SB1237
	Q3652	TRANSISTOR	2SC2412K
	Q3653	TRANSISTOR	2SC2412K
	Q3654	TRANSISTOR	2SC2412K
	Q3655	TRANSISTOR	DTC114TK
	Q54	TRANSISTOR	2SC1740S
	Q71	TRANSISTOR	2SA1037K
⚠	Q81	POWER MOS FET	IRF953
⚠	D3651	DIODE	1SS35
⚠	D3652	DIODE	1SS35
⚠	D3653	DIODE	1SS35
⚠	D3654	DIODE	1SS35
⚠	D3656	DIODE	1SR154-40
	D3657	DIODE	1SS355
	D3664	DIODE	1SS355
	D3665	DIODE	1SS355
	D71	DIODE	1SS355
	D72	DIODE	1SS355
	D73	DIODE	1SS355
	D74	DIODE	1SS355
	D75	DIODE	1SS355
	D77	DIODE	1SS355
	D81	CHIP ZENER DIODE	UDZS18B

CAPACITORS

C3651	CAPACITOR	CEAT1R0M50
C3652	CAPACITOR	CEAT101M10
C3653	CAPACITOR	CKSRYB223K50
C3654	ELECT. CAPACITOR	CEAT220M50
C3656	ELECT. CAPACITOR	CEAT470M35
C51	CAPACITOR	CEAT1R0M50
C52	ELECT. CAPACITOR	CEAT470M25
C55	CAPACITOR	CEAT100M50
C71	CAPACITOR	CKSRYF105Z10

RESISTORS

R51	RESISTOR	RS1/16S4700F
R55	RESISTOR	RS1/16S4700F
R56	RESISTOR	RS1/16S6801F
R61	RESISTOR	RS1/16S1801F
Other Resistors		RS1/16S###J

OTHERS

CN3303	10P PLUG	KM250NA10L
CN3651	L-PLUG (2P)	KM200SA2L

J TX MODULE

SEMICONDUCTORS

U1	TX DSP	FS2103TX-401
U21	REGULATOR(5V)	NCP1117ST50T3
U22	REGULATOR(3.3V)	NCP1117ST33T3
U23	TX MODULE	AWD600TX-US
U3	RESET IC	KIA7021AF
U5	SRAM	IS61LV256-12T
U6	REGULATOR(5V)	NCP1117ST50T3
U7	EEPROM(PAIR SET)*	AXX7169
U9	ADC	AK5380VT
D10	DIODE	LL4148

Mark No.	Description	Part No.
D2	DIODE	S5688G
D5	DIODE	HSM107S
D6	DIODE	HSM107S
COILS		
L1	CHIP COIL	LCTAW100J2520
L11	CHIP COIL	LCTAW100J2520
L15	CHIP SOLID INDUCTOR	DTL1067
L16	CHIP SOLID INDUCTOR	DTL1067
L2	CHIP COIL	LCTAW100J2520
L43	CHIP SOLID INDUCTOR	QTL1067
L6	CHIP SOLID INDUCTOR	DTL1067
L7	CHIP SOLID INDUCTOR	DTL1067
L74	CHIP SOLID INDUCTOR	DTL1067
L8	CHIP COIL	LCTAW100J2520
CAPACITORS		
C1	CAPACITOR	CCSRCH330J50
C11	ELECT. CAPACITOR	CEJQ221M16
C113	CAPACITOR	CCSRYB102K50
C12	CAPACITOR	CCSRYB103K50
C122	CAPACITOR	CCSRYB102K50
C129	CAPACITOR	CCSRYB471K50
C14	CAPACITOR	CCSRYB103K50
C16	CAPACITOR	CCSRYB103K50
C17	ELECT. CAPACITOR	CEAL4R7M16
C18	CAPACITOR	CCSRCH151J50
C19	CAPACITOR	CCSRCH151J50
C2	CAPACITOR	CCSRCH330J50
C20	ELECT. CAPACITOR	CEAL4R7M16
C21	CAPACITOR	CCSRYB103K50
C22	ELECT. CAPACITOR	CEAL2R2M35
C23	ELECT. CAPACITOR	CEAL100M16
C24	CAPACITOR	CCSRYB103K50
C25	ELECT. CAPACITOR	CEJQ221M16
C26	CAPACITOR	CCSRYB103K50
C27	ELECT. CAPACITOR	CEAL100M16
C3	CAPACITOR	CCSRYB103K50
C36	CAPACITOR	CCSRYB102K50
C37	CAPACITOR	CCSRYB102K50
C38	CAPACITOR	CCSRYB102K50
C4	CAPACITOR	CCSRYB103K50
C42	CAPACITOR	CCSRYB102K50
C43	CAPACITOR	CCSRYB102K50
C45	ELECT. CAPACITOR	CEJQ221M16
C46	ELECT. CAPACITOR	CEJQ221M16
C47	CAPACITOR	CCSRYB103K50
C48	ELECT. CAPACITOR	CEAL470M16
C49	CAPACITOR	CCSRYB471K50
C5	ELECT. CAPACITOR	CEJQ221M16
C50	ELECT. CAPACITOR	CEAL100M16
C51	CAPACITOR	CCSRYB103K50
C52	CAPACITOR	CCSRYB103K50
C53	CAPACITOR	CCSRYB103K50
C54	ELECT. CAPACITOR	CEAL470M16
C6	CAPACITOR	CCSRYB103K50
C62	CAPACITOR	CCSRYB102K50
C69	CAPACITOR	CCSRYB103K50
C9	ELECT. CAPACITOR	CEAL100M16
RESISTORS		
Other Resistors		RS1/16S###J

Mark No.	Description	Part No.
OTHERS		
X1	X'TAL OSC.(24.576MHz)	R49SDA-024576-F1-25C
ANT1	ANTENNA	ANT0100-0016
H2	FJ CONNECTOR 12P	12R-FJ
H10	9P FFC CONNECTOR	VKN1185

K RX MODULE

SEMICONDUCTORS		
U11	EEPROM(PAIR SET)*	AXX7169
U12	REGULATOR(5V)	NCP1117ST50T3
U16	RX MODULE	AWD600RX
U17	REGULATOR(5V)	NCP1117ST50T3
U18	3.3V VCXO	MK3711DTR
U19	REGULATOR(3.3V)	NCP1117ST33T3
U2	RX DSP	FS2103RX-A01
U20	RESET IC	KIA7021AF
U24	IC	NJM4558MD
U28	DAC	PCM1742KE
U4	SRAM	IS61LV256-12T
D16	DIODE	S5688G
D9	DIODE	LL4148
COILS		
L10	CHIP COIL	LCTAW100J2520
L104	CHIP SOLID INDUCTOR	DTL1067
L105	CHIP SOLID INDUCTOR	DTL1067
L109	CHIP SOLID INDUCTOR	DTL1067
L4	CHIP COIL	LCTAW100J2520
L41	CHIP SOLID INDUCTOR	QTL1067
L5	CHIP COIL	LCTAW100J2520
L6	CHIP COIL	LCTAW100J2520
L7	CHIP COIL	LCTAW100J2520
L71	CHIP SOLID INDUCTOR	DTL1067
L8	CHIP SOLID INDUCTOR	DTL1067
L9	CHIP COIL	LCTAW100J2520
CAPACITORS		
C10	ELECT. CAPACITOR	CEJQ221M16
C100	CAPACITOR	CKSRYB102K50
C101	CAPACITOR	CKSRYB102K50
C102	ELECT. CAPACITOR	CEAL100M16
C103	CAPACITOR	CKSRYB472K50
C105	ELECT. CAPACITOR	CEAL100M16
C107	ELECT. CAPACITOR	CEAL4R7M16
C108	ELECT. CAPACITOR	CEAL100M16
C109	ELECT. CAPACITOR	CEAL100M16
C110	CAPACITOR	CCSRCH300J50
C111	CAPACITOR	CCSRCH300J50
C114	CAPACITOR	CKSRYB102K50
C120	CAPACITOR	CKSRYB102K50
C121	CAPACITOR	CKSRYB102K50
C127	CAPACITOR	CKSRYB102K50
C13	CAPACITOR	CKSRYB103K50
C134	CAPACITOR	CKSRYB472K50
C135	CAPACITOR	CKSRYB472K50
C137	CAPACITOR	CKSRYB473K500
C138	CAPACITOR	CKSRYB102K50
C141	CAPACITOR	CKSRYB102K50
C15	CAPACITOR	CKSRYB103K50
C28	ELECT. CAPACITOR	CEJQ221M16
C29	CAPACITOR	CKSRYB103K50
C30	CAPACITOR	CKSRYB472K50

Mark No.	Description	Part No.
C31	CAPACITOR	CKSRYB472K50
C32	CAPACITOR	CCSRCK1R0C50
C33	CAPACITOR	CCSRCK1R0C50
C34	CAPACITOR	CCSRCH471J50
C39	CAPACITOR	CKSRYB102K50
C40	CAPACITOR	CKSRYB102K50
C41	CAPACITOR	CKSRYB102K50
C44	CAPACITOR	CKSRYB103K50
C55	CAPACITOR	CKSRYB103K50
C65	CAPACITOR	CKSRYB103K50
C66	CAPACITOR	CKSRYB103K50
C67	ELECT. CAPACITOR	CEAL100M16
C68	CAPACITOR	CKSRYB103K50
C7	CAPACITOR	CKSRYB103K50
C70	CAPACITOR	CKSRYB103K50
C71	ELECT. CAPACITOR	CEAL100M16
C72	CAPACITOR	CKSRYB103K50
C74	ELECT. CAPACITOR	CEAL100M16
C75	CAPACITOR	CKSRYB103K50
C76	CAPACITOR	CCSRCH471J50
C77	CAPACITOR	CKSRYB103K50
C79	ELECT. CAPACITOR	CEAL100M16
C8	CAPACITOR	CKSRYB103K50
C80	CAPACITOR	CKSRYB103K50
C81	CAPACITOR	CKSRYB103K50
C82	ELECT. CAPACITOR	CEAL100M16
C83	CAPACITOR	CKSRYB103K50
C84	ELECT. CAPACITOR(470µF)	CAP0191-4720
C85	CAPACITOR	CCSRCH471J50
C86	ELECT. CAPACITOR	CEAL470M16
C87	CAPACITOR	CKSRYB103K50
C88	ELECT. CAPACITOR	CEJQ221M16
C89	ELECT. CAPACITOR	CEAL4R7M16
C90	CAPACITOR	CKSRYB102K50
C91	CAPACITOR	CKSRYB102K500
C92	ELECT. CAPACITOR	CEAL100M16
C93	ELECT. CAPACITOR(470µF)	CAP0191-4720
C94	ELECT. CAPACITOR	CEJQ221M16
C96	CAPACITOR	CKSRYB472K50
C97	ELECT. CAPACITOR	CEAL100M16

RESISTORS

R120	RESISTOR	RS1/16S5101F
R121	RESISTOR	RS1/16S5101F
R2	RESISTOR	RS1/16S1002F
R64	RESISTOR	RS1/16S1002F
R65	RESISTOR	RS1/16S1002F
R66	RESISTOR	RS1/16S1002F
R67	RESISTOR	RS1/16S1002F
R68	RESISTOR	RS1/16S1002F
R69	RESISTOR	RS1/16S1002F
R70	RESISTOR	RS1/16S1002F
R90	RESISTOR	RD1/4PUF5R6J
Other Resistors		RS1/16S###J

OTHERS

X2	X'TAL OSC.(12.288MHz)	A49US-12288FA-14-30A
X3	X'TAL OSC.(24.576MHz)	R49SDA-024576-F1-25C
ANT3	ANTENNA	ANT0100-0016
H3	12P SOCKET	52418-1210
H6	9P FFC CONNECTOR	VKN1213

*The AXX7169 on TX MODULE/RX MODULE is a service part containing two EEPROMs,both of which must be replaced when either needs to be replaced.

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TROUBLESHOOTING

[TROUBLESHOOTING]

- [Unable to set the Power ON] → To (1) [When unable to set the Power ON]
- [Unable to output sound] → To (2) [When unable to output sound]

(1) [When unable to set the Power ON]

[Unable to set the Power ON]

< Is the fuse broken?>

- NO → < Does the Power turn OFF directly when pushing the Power SW?>
  - NO → < Is the supplied power correct?> [Check the power supply lines.]
  - YES → [As the protection circuit is operating, diagnose referring to 7.1.4.]
- YES → [Repair the fuse (FU1: 1.6A).] → < Able to turn the Power ON?>
  - NO → [Check whether the circuit is shortcircuited when the fuse is broken again.] POWER ASSY : CN11,D11,C13,C14,C12 MAIN ASSY : CN13 ,etc
  - YES → [END]

(2) [When unable to output sound]

[Unable to output sound]

- Input the sound signal to the transmitter.
- Set the wireless mode to " Surround ".

< Is the Tuned Indicator lit?>

- NO → [Check each part of power voltage.]
  - ■ Transmitter section
    TX ASSY : CN8201(Pin11: 9V)
    RX Module : U6(5V)
    U21(5V)
    U22(3.3V)
  - ■ Wireless Speaker section
    MAIN ASSY : CN3701(Pin1: 9V)
    RX Module : D16Cathode
    U17(5V)
    U12(3.3V)
    U19(3.3V)
- YES → [Check each part of waveform.]
  - ■ Transmitter section
    [TX ASSY: JA8002→CN8201]→[TX Module: U9(Pin2)→U1(Pin76)→R74
  - ■ Wireless Speaker section
    [RX Module: R52→U2(Pin76)→U28(Pin7)]→
    [MAIN ASSY: CN3701(Pin5)→IC3001(Pin13)→CN3304(Pin1)→CN3306(Pin5)

< Is the muting circuit ON?>

MAIN ASSY CN3304 Pin6 : Low, Pin4 : High

- NO → [Diagnose around MAIN ASSY Q3511,Q3502.]

7.1.2 NOTES ON REPLACE OF PARTS

(ID-related)

The ID number for an individual product is stored in the EEPROMs (U7 for the TX module, U11 for the RX module) of each module (TX module: AXF7006, RX module: AXF7008). It should be noted that wireless communications cannot be performed unless these ID numbers are identical.

1. Replacement of the TX or RX module

Upon replacement of the TX (AXF7006) or RX (AXF7008) module, remove the EEPROM from the original module and mount it on the new one.

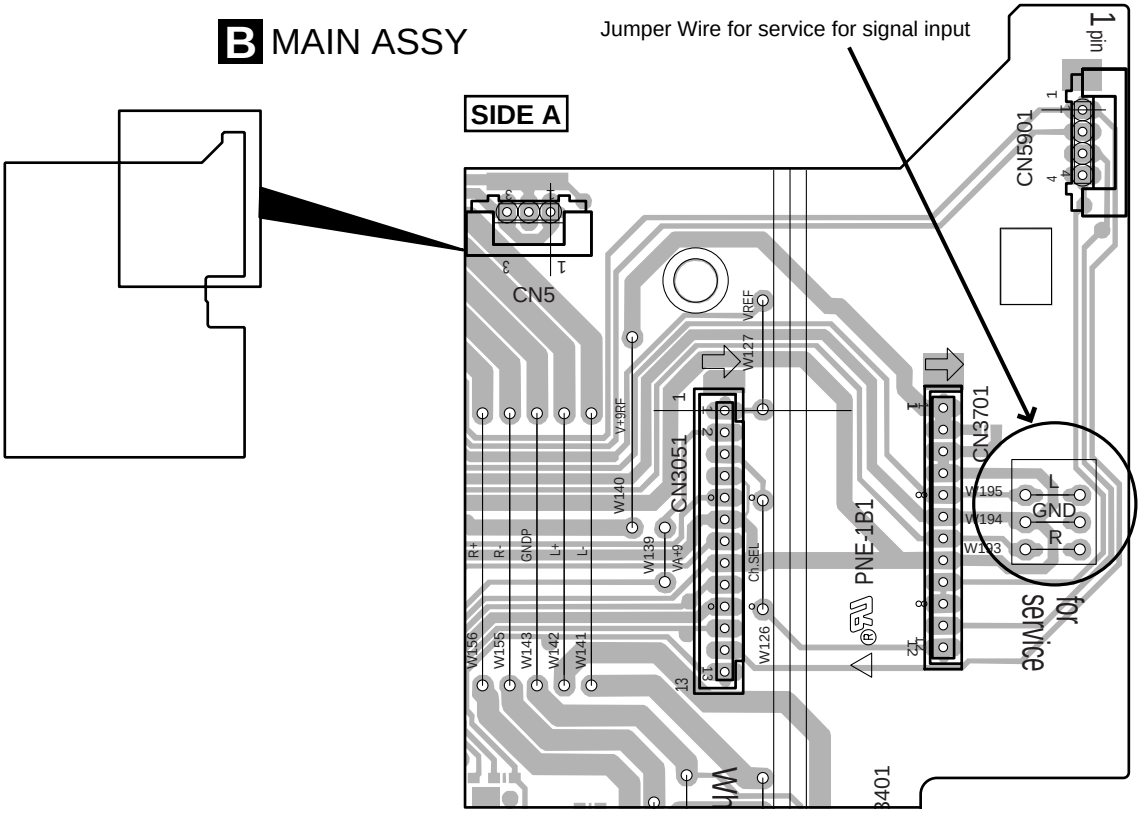
2. Replacement of the EEPROMs (U7 and U11)

Using service part AXX7169 (a kit containing two EEPROMs with identical ID numbers stored in them,) replace both EEPROMs when either needs to be replaced.

Note : The AXX7169 is a service part containing two EEPROMs, both of which must be replaced when either needs to be replaced.

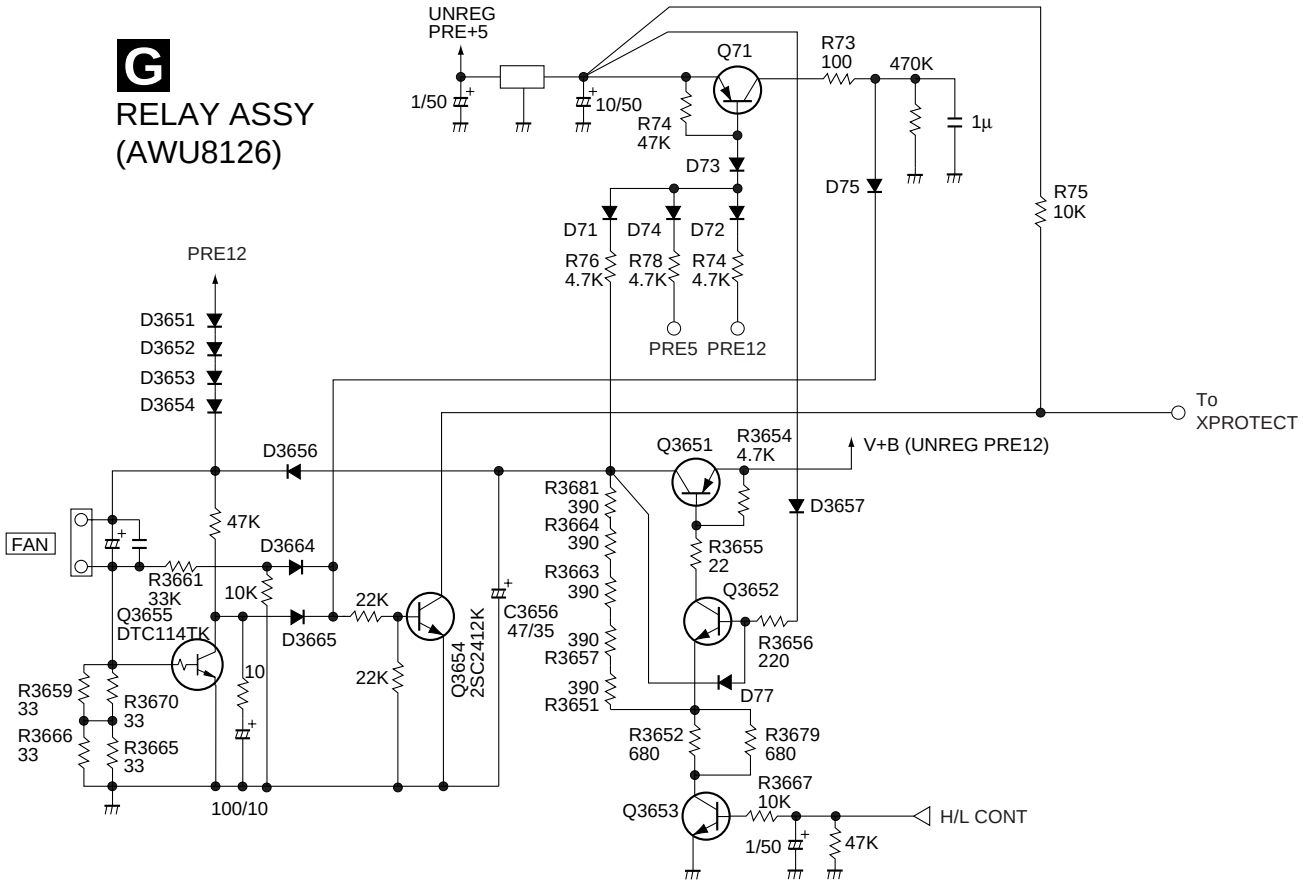
7.1.3 DIAGNOSIS OF THE AMPLIFIER SECTION

You can diagnose the amplifier section even if the transmitter section is not available. Input audio signals to the Jumper Wire for service use indicated below. At that time remove the RX MODULE.



7.1.4 PROTECTION CIRCUIT

■ PROTECT Operation Description



This circuit has following five items that performs the Short detection.

① PRE5
② PRE12
③ FAN +B (for Hi rotation)
④ FAN short
⑤ FAN open

About ① to ③

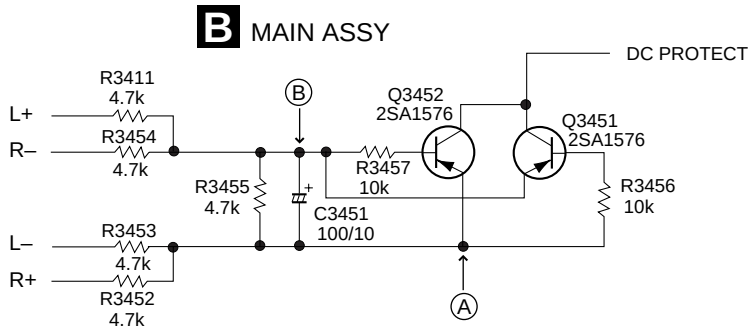
When the voltages of ① to ③ fell in the voltage (less than about 3.2V) that Q71 turned ON, and turn Q3654 ON via R73 and D75.
→ XPROTECT becomes low.

About FAN short or open detection

At normal state:
The voltage appears in Q3655 base by current that flows to the FAN, and so Q3655 is always ON.
Q3654 cannot turn ON so that the voltage appears only with Vce(sat) of Q3655 in D3665 anode.
In addition, Q3654 cannot turn ON so that the voltage (Vb × 1/4.3=lesst than 0.8V) that divided the base voltage of Q3655 with 33k and 10k is the voltage of D3664 anode.
Therefore, Q3654 maintains the OFF state.

In the short or open state:
The voltage appears at D3664 anode in the short state and appears at D3665 anode in the open state.
Q3654 turns ON and XPROTECT becomes low (Active).

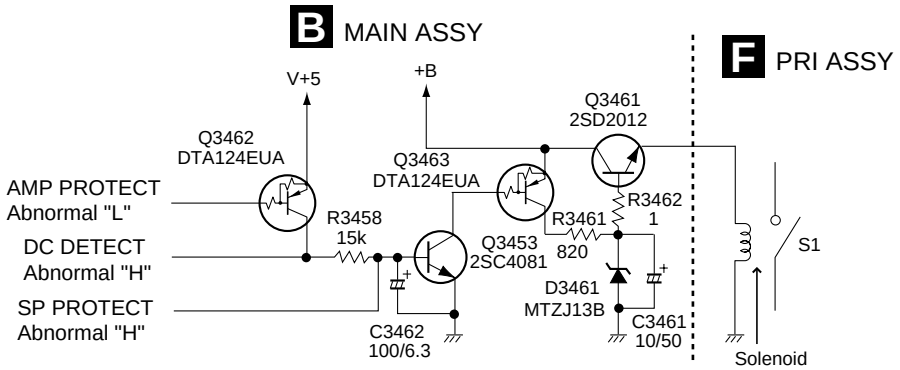
DC Detection Circuit for SP Terminal



This circuit is to protect the speaker from overheating if the Amplifier Power IC(IC3301) malfunctions.

[When L+ position becomes 0V]
As the Amplifier Power IC is single power supply, the bias voltage for SP terminal is always about 8V. Therefore the voltage of point A is 5.1V, point B is 6.9V, and then Q3451 becomes ON. Then the voltage of DC PROTECT becomes 7V.

Operation of the Protection Circuit



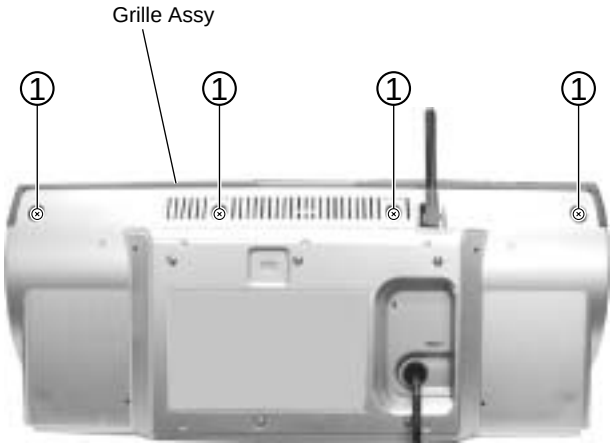
When the base of Q3453 becomes "H", Q3453, Q3463 and Q3461 becomes ON, and 12V falls on the S1 solenoid.
Therefore the Power Switch S1 will turn OFF.

7.1.5 DISASSEMBLY

Note: For performing the diagnosis shown below, the following jig cable for service is required:
• GGD1335

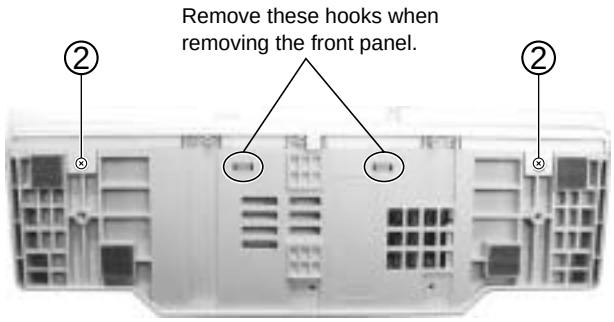
1 Grille Assy and Front Panel

① Remove the grille assy by removing the four screws.



• Rear View

② Remove the two screws.

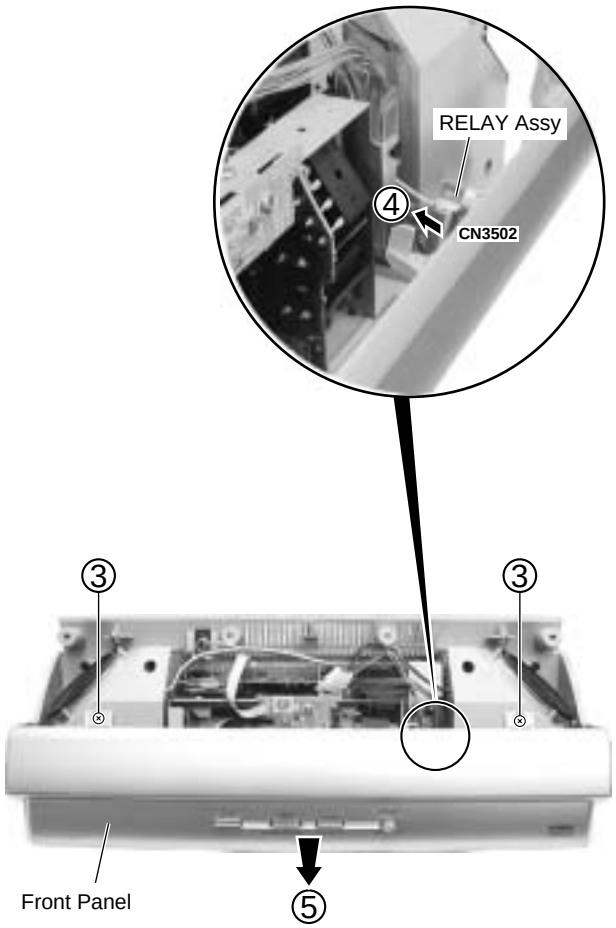


• Bottom View

③ Remove the two screws.

④ Remove the one connector.

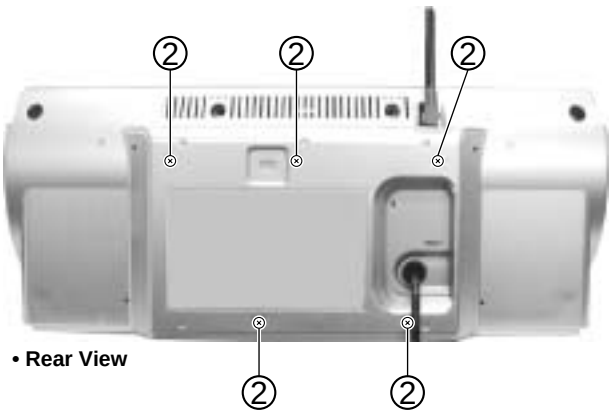
⑤ Removing the hooks of the bottom plate, remove the front panel.



2 Chassis Section and Antenna

① Remove the grille assy and the front panel.
(See Step 1.)

② Remove the five screws.



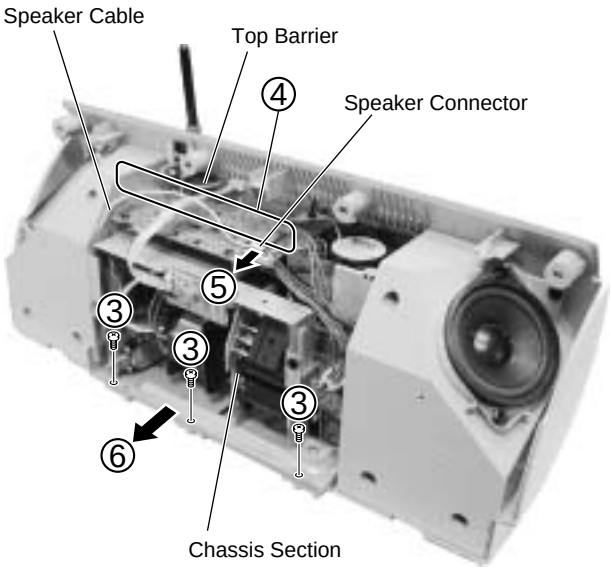
• **Rear View**

③ Remove the three screws.

④ Remove the speaker cable from top barrier.

⑤ Remove the speaker connector.

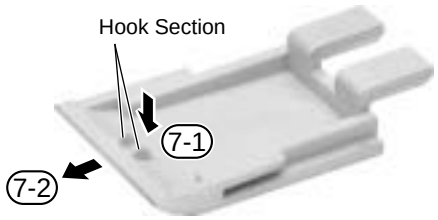
⑥ Pull out the chassis section.



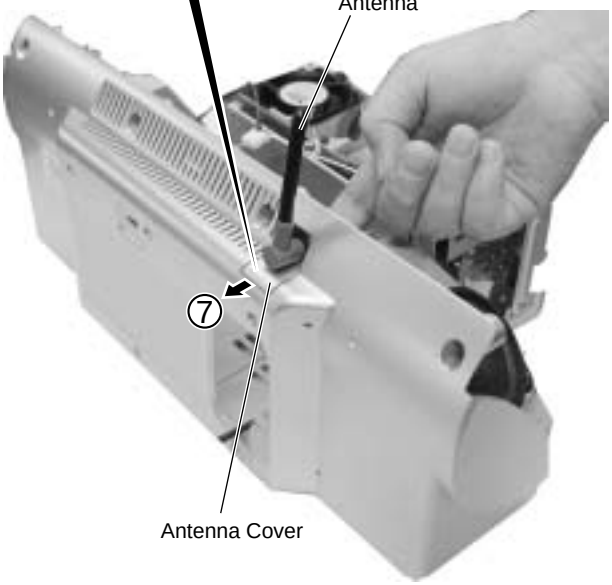
⑦ Remove the antenna by removing the antenna cover.

⑦-1 Push up the hook section.

⑦-2 Push out the antenna cover toward the rear side.



• **Bottom View**



3 RX Module

① Remove the grille assy and the front panel.
(See Step 1.)

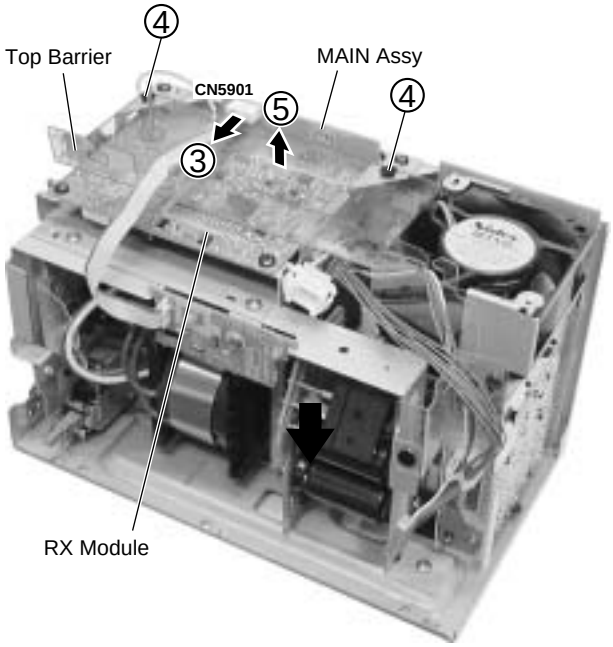
② Remove the chassis section and the antenna.
(See Step 2.)

---

③ Remove the one connector.

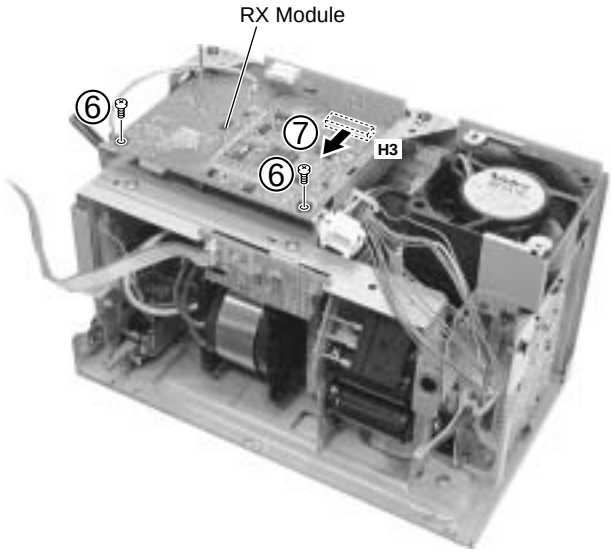
④ Remove the two push rivets.

⑤ Remove the top barrier.



⑥ Remove the two screws.

⑦ Remove the RX module by removing the one connector.

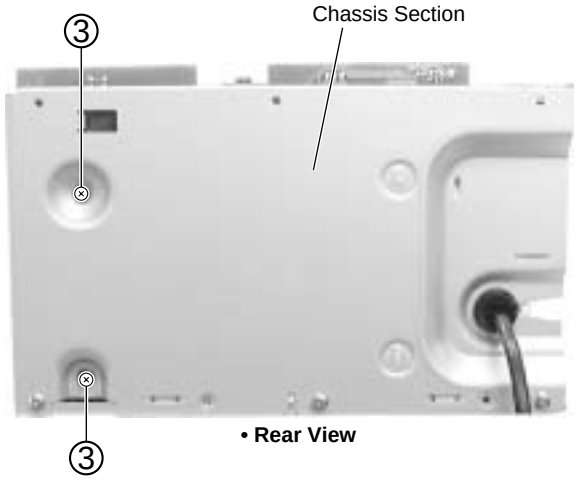


4 AMP Module L-2CH

① Remove the grille assy and the front panel. (See Step 1.)

② Remove the chassis section and the antenna. (See Step 2.)

③ Remove the two screws.



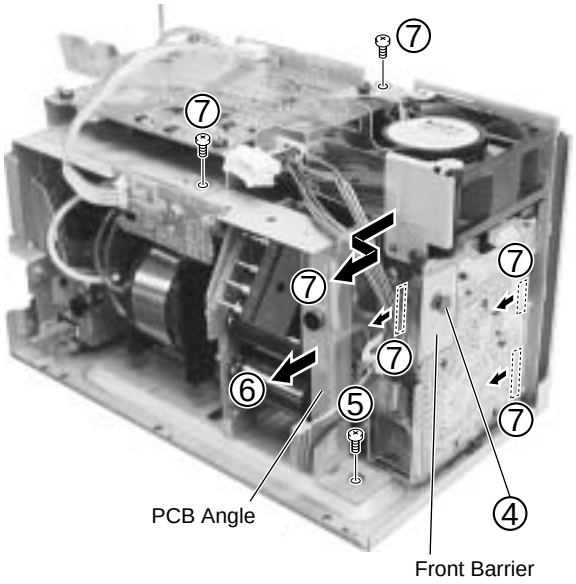
• **Rear View**

④ Remove the one push rivet.

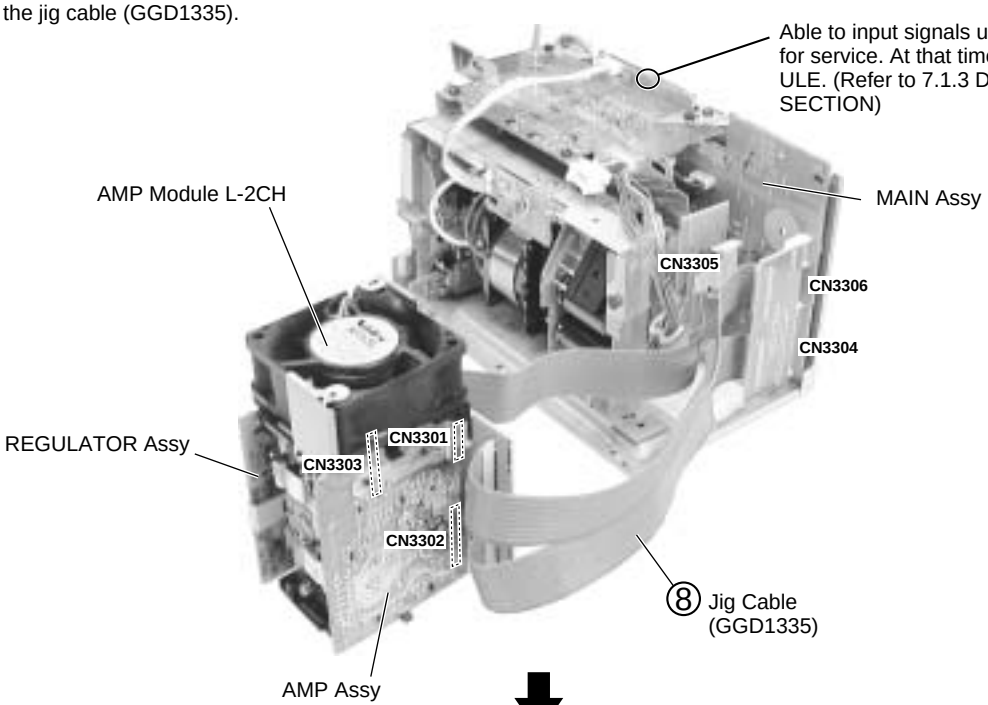
⑤ Remove the one screw.

⑥ Put off the PCB angle for a while.

⑦ After removing POWER ASSY by removiing two screws, remove the AMP Module L-2CH by removing the three connectors.



⑧ Connect the jig cable (GGD1335).



Diagnosis

7.2 IC

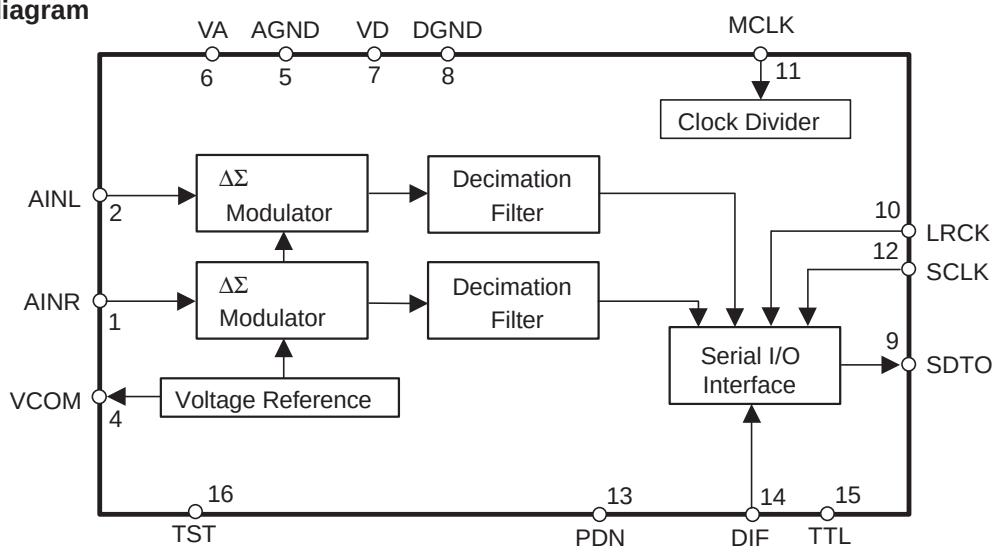
• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

● **IC List** AK5380VT, PCM1742KE, FS2103TX, FS2103RX

■ AK5380VT (TX Module : U9)

• AD Converter

● **Blockdiagram**



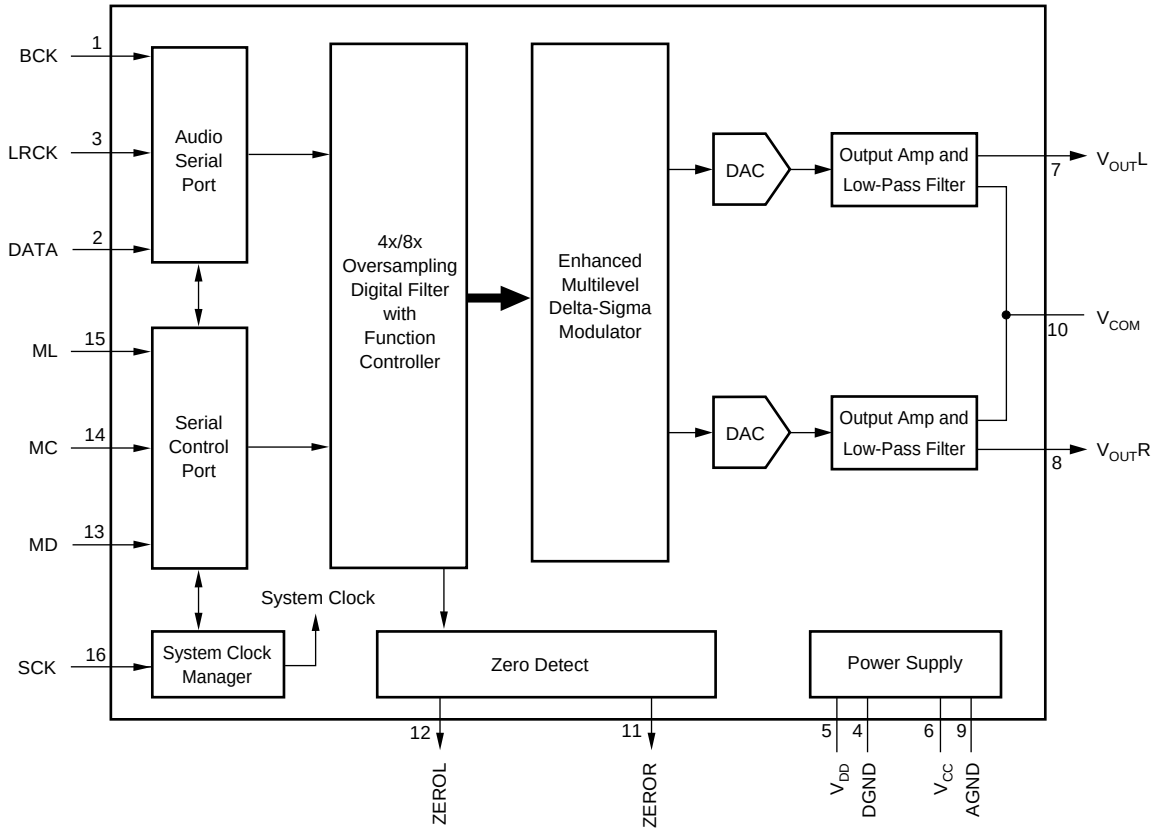
● **Pin function**

No.	Pin Name	I/O	Pin Function
1	AINR	I	Rch analog input pin
2	AINL	I	Lch analog input pin
3	NC	–	NC pin (No internal bonding)
4	VCOM	O	Common voltage output pin
5	AGND	–	Analog ground pin
6	VA	–	Analog power supply pin, +4.5– +5.5V
7	VD	–	Digital power supply pin, +2.7– +5.5V (fs=48kHz), +4.5– +5.5V (fs=96kHz)
8	DGND	–	Digital ground pin
9	SDTO	O	Serial data output pin
10	LRCK	I	L/R channel clock pin (Input fs clock)
11	MCLK	I	Master clock input pin
12	SCLK	I	Serial data clock input pin
13	PDN	I	Power down pin ["L ": power down mode] Be sure to reset once when power on.
14	DIF	I	Serial interface format pin ["L" : cut short forward, "H ": IIS]
15	TTL	I	Selection pin for digital input level ["L" : CMOS level (VD=2.7– 5.5V), "H" : TTL level (VD=4.5– 5.5V)]
16	TST	I	Test pin (internal pull down)

PCM1742KE (RX Module : U28)

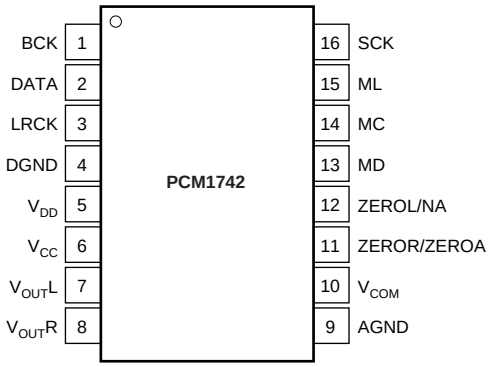
• DA Converter

● Blockdiagram



● Pin layout

TOP VIEW



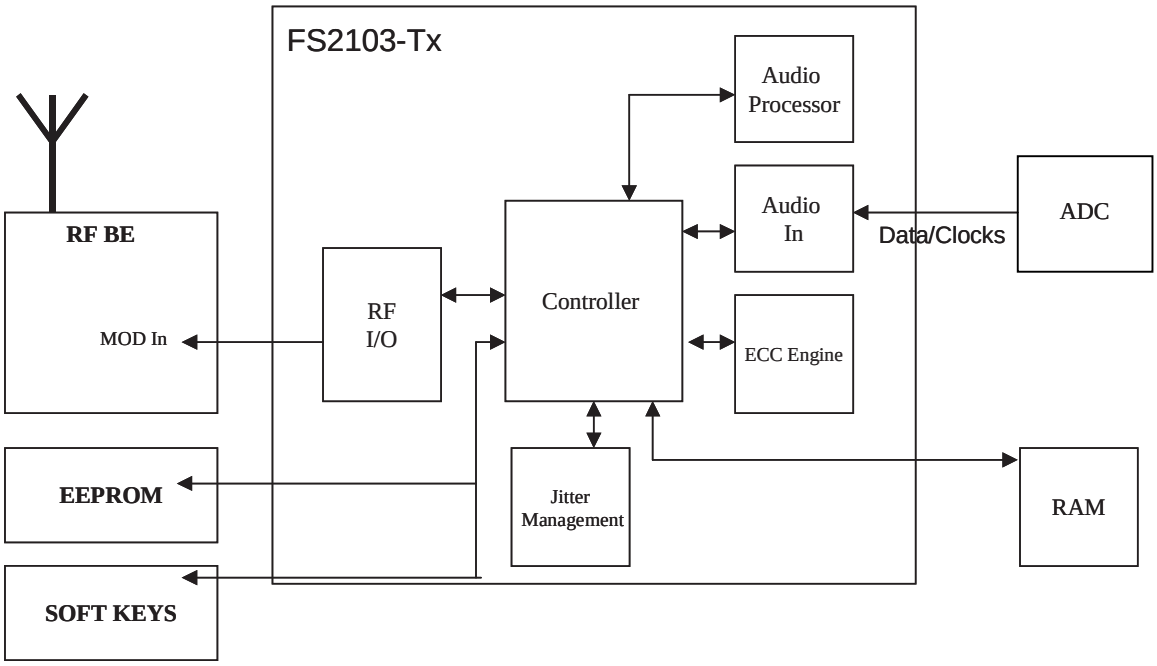
● Pin function

No.	Pin Name	I/O	Pin Function
1	BCK	I	Bit clock input for audio data (Schmidt trigger input)
2	DATA	I	Digital input for audio data (Schmidt trigger input)
3	LRCK	I	Latch enable input for L/R channel of audio data
4	DGND	–	Digital ground
5	VDD	–	Digital power supply, +3.3V
6	VCC	–	Analog power supply, +5V
7	VOUTL	O	Analog output for L ch
8	VOUTR	O	Analog output for Rch
9	AGND	–	Analog ground
10	VCOM	–	Decoupling for same phase voltage
11	ZEROR/ZEROA	O	Zero flag output for Rch / zero flag output for L/R ch
12	ZEROL/NA	O	Zero flag output for Lch / Not used
13	MD	I	Data input for mode control
14	MC	I	Clock input for mode control
15	ML	I	Latch input for mode control
16	SCK	I	System clock input

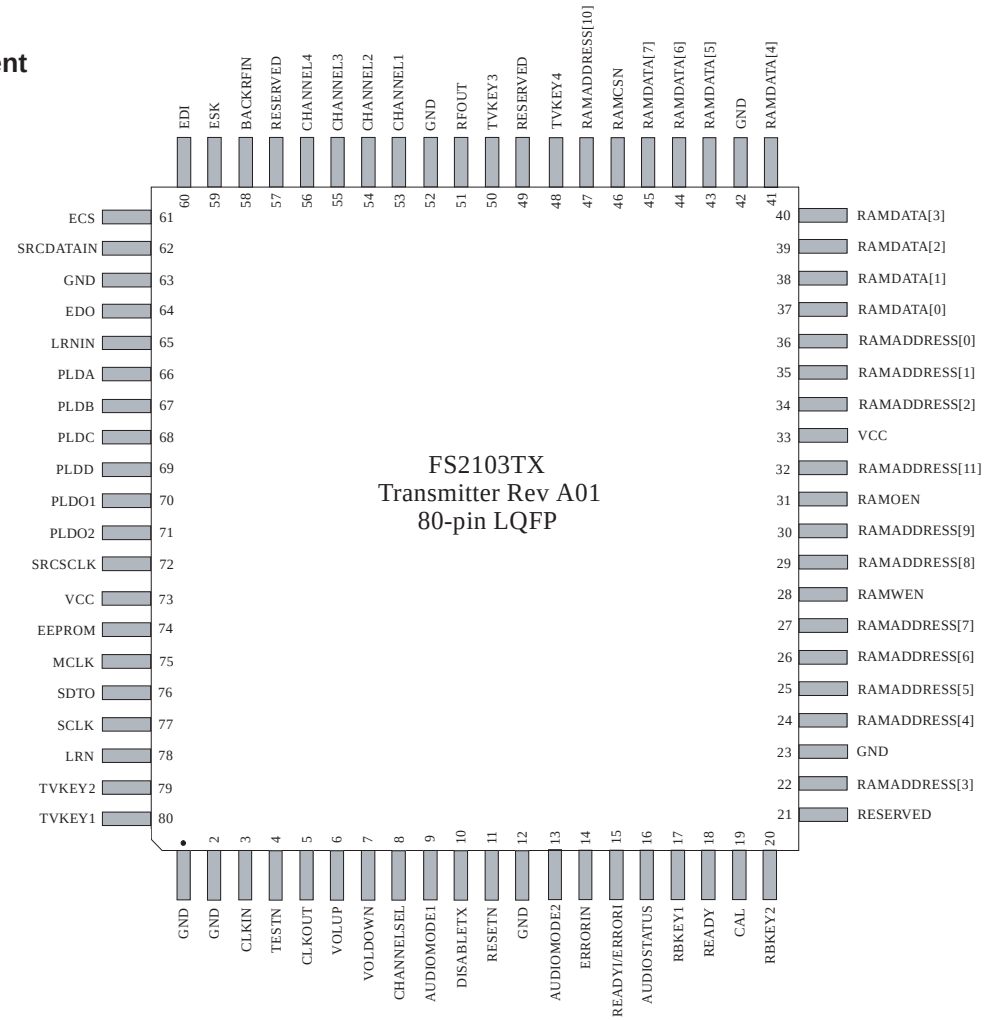
FS2103TX (TX Module : U1)

• DSP for Transmitter

● Blockdiagram



● Pin Assignment



● **Pin Function (1/3)**

Pin No	Name	Functional Grouping	IO Type	Description
1	GND	Ground	NA	Ground
2	GND	Ground	NA	Ground
3	CLKIN	System	Input	24.576MHz crystal pad input
4	TESTN	TEST	Input	Test Mode Select
5	CLKOUT	System	Output	24.576MHz crystal pad output
6	VOLUP	System	Input	Push button Digital Volume Up pin
7	VOLDOWN	System	Input	Push button Digital Volume Down pin
8	CHANNELSEL	System	Input	Push button Channel Select pin
9	AUDIOMODE1	System	Input	Audio Mode 1
10	DISABLET_X	System	Input	Disable RFOUT
11	RESETN	System	Input	Master reset – Active Low
12	GND	Ground	NA	Ground
13	AUDIOMODE2	System	Input	Audio Mode 2
14	ERRORIN	System	Input	Audio Error signal – Active High (default)
15	READYI/ERRORI	System	Output	Configurable READYN or ERRORN signal
16	AUDIOSTATUS	System	Output	Audio Status Indicate, 0 => Low level audio or no audio Tri-State => Audio present Open Drain Output
17	RBKEY1	BackLink	Output	Received Back Key 1
18	READY	System	Output	Chip ready status signal (active high) – Open Drain
19	CAL	System	Output	ADC Calibration Signal
20	RBKEY2	BackLink	Output	Received Back Key 2
21	RESERVED	NA	NA	Reserved Pin
22	RAMADDRESS[3]	SRAM	Output	External SRAM Address Bit 3
23	GND	Ground	NA	Ground
24	RAMADDRESS[4]	SRAM	Output	External SRAM Address Bit 4
25	RAMADDRESS[5]	SRAM	Output	External SRAM Address Bit 5
26	RAMADDRESS[6]	SRAM	Output	External SRAM Address Bit 6
27	RAMADDRESS[7]	SRAM	Output	External SRAM Address Bit 7
28	RAMWEN	SRAM	Output	External SRAM Write Enable – Active Low
29	RAMADDRESS[8]	SRAM	Output	External SRAM Address Bit 8
30	RAMADDRESS[9]	SRAM	Output	External SRAM Address Bit 9
31	RAMOEN	SRAM	Output	External SRAM Output Enable – Active Low
32	RAMADDRESS[11]	SRAM	Output	External SRAM Address Bit 11
33	VCC	Power	NA	3.3 V
34	RAMADDRESS[2]	SRAM	Output	External SRAM Address Bit 2
35	RAMADDRESS[1]	SRAM	Output	External SRAM Address Bit 1
36	RAMADDRESS[0]	SRAM	Output	External SRAM Address Bit 0
37	RAMDATA[0]	SRAM	Bidirectional	External SRAM Data Bit 0
38	RAMDATA[1]	SRAM	Bidirectional	External SRAM Data Bit 1
39	RAMDATA[2]	SRAM	Bidirectional	External SRAM Data Bit 2
40	RAMDATA[3]	SRAM	Bidirectional	External SRAM Data Bit 3

● **Pin Function (2/3)**

41	RAMDATA[4]	SRAM	Bidirectional	External SRAM Data Bit 4
42	GND	Ground	NA	Ground
43	RAMDATA[5]	SRAM	Bidirectional	External SRAM Data Bit 5
44	RAMDATA[6]	SRAM	Bidirectional	External SRAM Data Bit 6
45	RAMDATA[7]	SRAM	Bidirectional	External SRAM Data Bit 7
46	RAMCSN	SRAM	Output	External SRAM Chip Select – Active Low
47	RAMADDRESS[10]	SRAM	Output	External SRAM Address Bit 10
48	TVKEY4	Forward Link	Input	Input Forward Virtual Key 4
49	RESERVED	NA	NA	Reserved Pin
50	TVKEY3	Forward Link	Input	Input Forward Virtual Key 3
51	RFOUT	Front-End	Output	RF Digital Output to RF Front End Module
52	GND	Ground	NA	Ground
53	CHANNEL1	Front-End	Output	Channel Control Bit 1
54	CHANNEL2	Front-End	Output	Channel Control Bit 2
55	CHANNEL3	Front-End	Output	Channel Control Bit 3
56	CHANNEL4	Front-End	Output	Channel Control Bit 4
57	RESERVED	NA	NA	Reserved Pin
58	BACKRFIN	BackLink	Input	Back RF Digital Data In
59	ESK	Serial EEPROM	Output	Serial Clock Input to Serial EEPROM
60	EDI	Serial EEPROM	Output	Serial Data Input to Serial EEPROM
61	ECS	Serial EEPROM	Output	Chip Select to Serial EEPROM (active low)
62	SRCDATAIN	SRC	Input	SRC DATAOUT to FS2103
63	GND	Ground	NA	Ground
64	EDO	Serial EEPROM	Input	Serial Data Output from Serial EEPROM
65	LRNIN	SRC	Input	SRC LRN Input
66	PLDA	Programmable Logic	Input	Programmable Input Logic A
67	PLDB	Programmable Logic	Input	Programmable Input Logic B
68	PLDC	Programmable Logic	Input	Programmable Input Logic C
69	PLDD	Programmable Logic	Input	Programmable Input Logic D
70	PLDO1	Programmable Logic	Output	Programmable Output Logic 1, PLDO1 = f(A,B)
71	PLDO2	Programmable Logic	Output	Programmable Output Logic 2, PLDO1 = f(C,D)
72	SRCSCLK	SRC	Input/Output	SRC SCLKOUT or SRC SCLKIN signal
73	VCC	Power	NA	3.3 V
74	EEPROM	System	Input	Indicate the usage of a external serial EEPROM, 1 => serial EEPROM is present 0 => serial EEPROM is absent, use system default settings upon power up

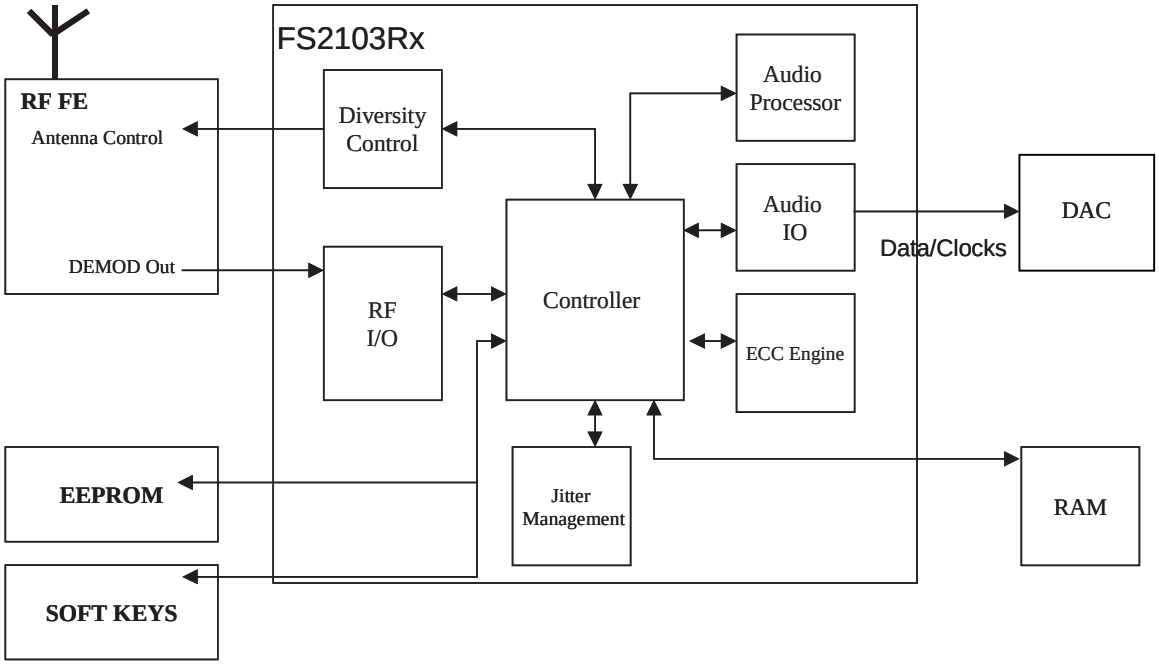
● **Pin Function (3/3)**

75	MCLK	ADC	Output	ADC-MCLK (12.288 MHz)
76	SDTO	ADC	Input	ADC-SDTO (ADC Data input)
77	SCLK	ADC	Output	ADC-SCLK (3.072 MHz)
78	LRN	ADC	Output	ADC-LRN, ASRC-LRN (48K)
79	TVKEY2	Forward Link	Input	Input Forward Virtual Key 2
80	TVKEY1	Forward Link	Input	Input Forward Virtual Key 1

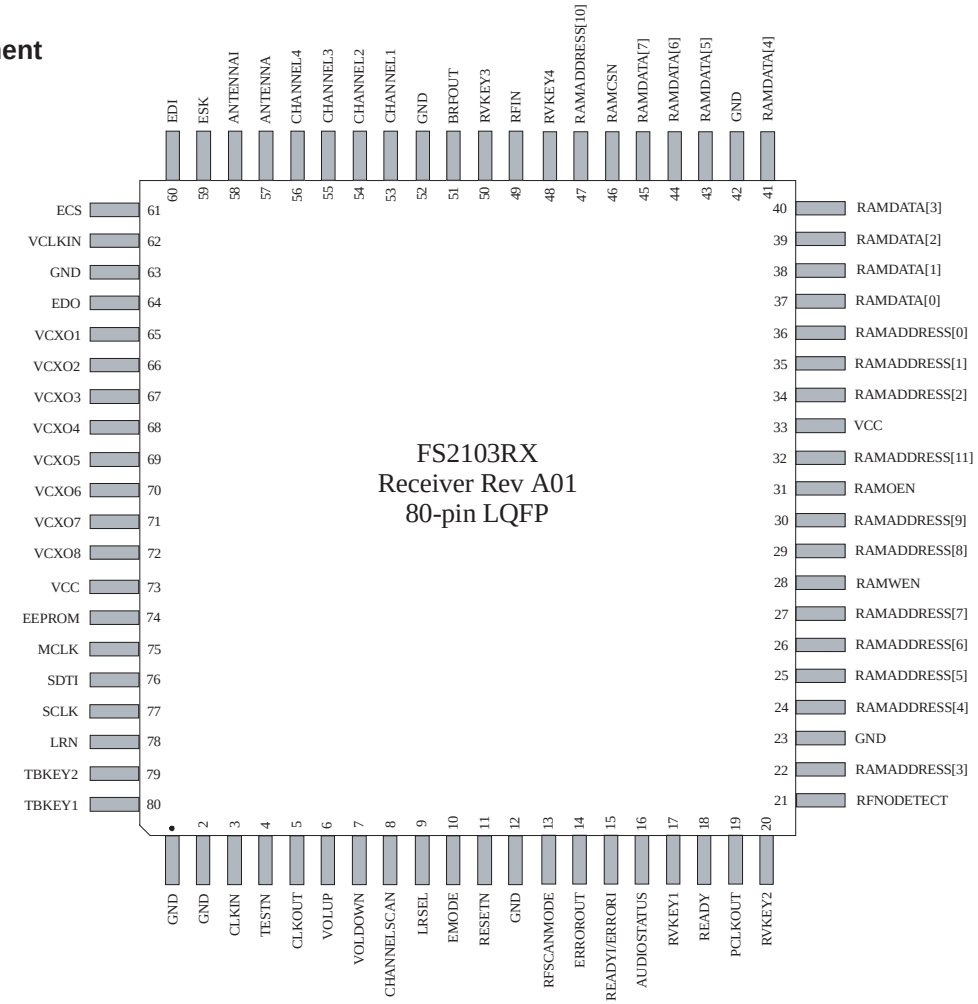
FS2103RX (RX Module : U2)

• DSP for Receiver

● Blockdiagram



● Pin Assignment



● **Pin Function (1/2)**

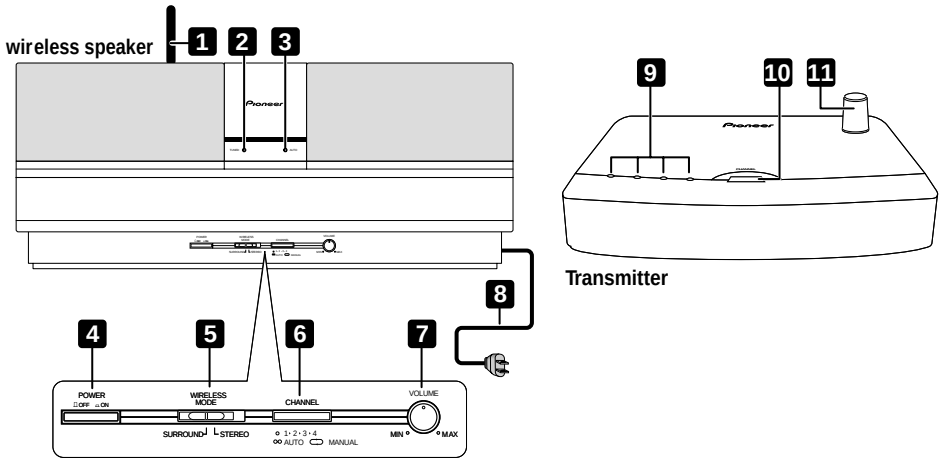
Pin No	Name	Functional Grouping	IO Type	Description
1	GND	Ground	NA	Ground
2	GND	Ground	NA	Ground
3	CLKIN	System	Input	24.576MHz crystal pad input
4	TESTN	TEST	Input	Test Mode Select
5	CLKOUT	System	Output	24.576MHz crystal pad output
6	VOLUP	System	Input	Push button Digital Volume Up pin
7	VOLDOWN	System	Input	Push button Digital Volume Down pin
8	CHANNELSCAN	System	Input	Push button Channel AutoScan pin
9	LRSEL	System	Input	Left Right Audio Channel Select
10	EMODE	System	Input	Extended Mute Mode Select, 0 => Non extended muting 1 => Extended Muting
11	RESETN	System	Input	Master reset – Active Low
12	GND	Ground	NA	Ground
13	RFSCANMODE	System	Output	RF Scan Mode Status Output
14	ERROROUT	System	Output	System Error signal Output
15	READYI/ERRORI	System	Output	Configurable READYN or ERRORN signal
16	AUDIOSTATUS	System	Output	Audio Status Indicate, 0 => Low level audio or no audio Tri-State => Audio present Open Drain Output
17	RVKEY1	Forward Link	Output	Received Forward Virtual Key 1
18	READY	System	Output	Chip ready status signal (active high) – Open Drain
19	PCLKOUT	System	Output	Programmable Clock Output
20	RVKEY2	Forward Link	Output	Received Forward Virtual Key 2
21	RFNODETECT	System	Output	RF Status Indicate
22	RAMADDRESS[3]	SRAM	Output	External SRAM Address Bit 3
23	GND	Ground	NA	Ground
24	RAMADDRESS[4]	SRAM	Output	External SRAM Address Bit 4
25	RAMADDRESS[5]	SRAM	Output	External SRAM Address Bit 5
26	RAMADDRESS[6]	SRAM	Output	External SRAM Address Bit 6
27	RAMADDRESS[7]	SRAM	Output	External SRAM Address Bit 7
28	RAMWEN	SRAM	Output	External SRAM Write Enable – Active Low
29	RAMADDRESS[8]	SRAM	Output	External SRAM Address Bit 8
30	RAMADDRESS[9]	SRAM	Output	External SRAM Address Bit 9
31	RAMOEN	SRAM	Output	External SRAM Output Enable – Active Low
32	RAMADDRESS[11]	SRAM	Output	External SRAM Address Bit 11
33	VCC	Power	NA	3.3 V
34	RAMADDRESS[2]	SRAM	Output	External SRAM Address Bit 2
35	RAMADDRESS[1]	SRAM	Output	External SRAM Address Bit 1
36	RAMADDRESS[0]	SRAM	Output	External SRAM Address Bit 0
37	RAMDATA[0]	SRAM	Bidirectional	External SRAM Data Bit 0
38	RAMDATA[1]	SRAM	Bidirectional	External SRAM Data Bit 1

● **Pin Function (2/2)**

39	RAMDATA[2]	SRAM	Bidirectional	External SRAM Data Bit 2
40	RAMDATA[3]	SRAM	Bidirectional	External SRAM Data Bit 3
41	RAMDATA[4]	SRAM	Bidirectional	External SRAM Data Bit 4
42	GND	Ground	NA	Ground
43	RAMDATA[5]	SRAM	Bidirectional	External SRAM Data Bit 5
44	RAMDATA[6]	SRAM	Bidirectional	External SRAM Data Bit 6
45	RAMDATA[7]	SRAM	Bidirectional	External SRAM Data Bit 7
46	RAMCSN	SRAM	Output	External SRAM Chip Select – Active Low
47	RAMADDRESS[10]	SRAM	Output	External SRAM Address Bit 10
48	RVKEY4	Forward Link	Output	Received Forward Virtual Key 4
49	RFIN	Front-End	Input	RF Front End Digital Output
50	RVKEY3	Forward Link	Output	Received Forward Virtual Key 3
51	BRFOUT	BackLink	Output	Back RF Digital Out
52	GND	Ground	NA	Ground
53	CHANNEL1	Front-End	Output	Channel Control Bit 1
54	CHANNEL2	Front-End	Output	Channel Control Bit 2
55	CHANNEL3	Front-End	Output	Channel Control Bit 3
56	CHANNEL4	Front-End	Output	Channel Control Bit 4
57	ANTENNA	Front-End	Output	Antenna Switch Logic
58	ANTENNAI	Front-End	Output	Antenna Switch Logic Inverted
59	ESK	Serial EEPROM	Output	Serial Clock Input to Serial EEPROM
60	EDI	Serial EEPROM	Output	Serial Data Input to Serial EEPROM
61	ECS	Serial EEPROM	Output	Chip Select to Serial EEPROM (active low)
62	VCLKIN	DAC	Input	VCXO 12.288 MHz clock input
63	GND	Ground	NA	Ground
64	EDO	Serial EEPROM	Input	Serial Data Output from Serial EEPROM
65	VCXO1	DAC	Output	VCXO Control Bit 1
66	VCXO2	DAC	Output	VCXO Control Bit 2
67	VCXO3	DAC	Output	VCXO Control Bit 3
68	VCXO4	DAC	Output	VCXO Control Bit 4
69	VCXO5	DAC	Output	VCXO Control Bit 5
70	VCXO6	DAC	Output	VCXO Control Bit 6
71	VCXO7	DAC	Output	VCXO Control Bit 7
72	VCXO8	DAC	Output	VCXO Control Bit 8
73	VCC	Power	NA	3.3 V
74	EEPROM	System	Input	Indicate the usage of an external serial EEPROM, 1 => serial EEPROM is present 0 => serial EEPROM is absent, use system default settings upon power up
75	MCLK	DAC	Output	DAC-MCLK (12.288 MHz)
76	SDTI	DAC	Output	DAC-SDTI (I2S format)
77	SCLK	DAC	Output	DAC-SCLK (3.072 MHz)
78	LRN	DAC	Output	DAC-LRN (48K)
79	TBKEY2	BackLink	Input	Input Back Key 2
80	TBKEY1	BackLink	Input	Input Back Key 1

8. PANEL FACILITIES

Wireless speaker system



1 Wireless speaker antenna
Receives signals from the transmitter.

2 TUNED indicator
Lights when the signal from the transmitter is properly received.

3 AUTO indicator
Lights when **AUTO** mode is selected.

4 POWER button
Press to switch the unit on or off.

5 WIRELESS MODE switch
Selects between **SURROUND** or **STEREO**.

Caution

- Make sure to stop/turn off the source and switch off the wireless speaker when switching speaker systems. The wireless speaker will output the source at very loud volumes if the wireless speaker is set to **SURROUND** and the main unit is set to **W.Stereo**. In this case, the volume control has no effect, so please follow these precautions.

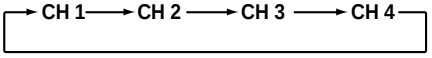
6 CHANNEL button
The default setting is **AUTO**. If you experience poor reception due to your listening environment, you can improve the reception of the receiver by switching to **MANUAL** and selecting an appropriate frequency using the **CHANNEL** button on the transmitter. Press and hold for more than 5 seconds to switch between **AUTO** and **MANUAL**.

7 VOLUME knob
Turn to adjust the speaker volume when the **WIRELESS MODE** is set to **STEREO**.

8 Power cord
Connect to an AC outlet.

9 CHANNEL indicators
Lights to indicate the selected channel.

10 CHANNEL button
Press to select a frequency channel. The frequency channel changes sequentially each time the button is pressed:



11 Antenna
Transmits signals to the XW-HTD630 wireless speaker.

Note

- The **VOLUME** knob has no effect when **WIRELESS MODE** is set to **SURROUND**.
- When you select **AUTO**, the channel will automatically be set to the same one selected on the transmitter.
- Even when not in use, the fan in the wireless speaker will continue to operate. Switching off the wireless speaker when not in use will increase product life.